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PAPER TRADE JOURNAL

Vol. LXXXVI, No. 12 MARCH 22, 1928 Per copy 10 Cents Per annum $4.00

Showing Beloit Removable Fourdrinier rolled out by power as a unit preparatory to installing wire. Alignment of rolls is not disturbed. Rolls, sweatls and suction boxes are not dismantled. The table rolls out as a unit, making the task of installing wires simple indeed.

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is satisfaction built upon quality of the product ... upon the various services given unstintingly ... upon the feeling of confidence engendered by frank and fair dealing.

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PAPER TRADE JOURNAL
ESTABLISHED 1872

THE INTERNATIONAL WEEKLY OF THE PAPER AND PULP INDUSTRY AND THE PIONEER PUBLICATION IN ITS FIELD

FIFTY-SIXTH YEAR

Published Every Thursday by the

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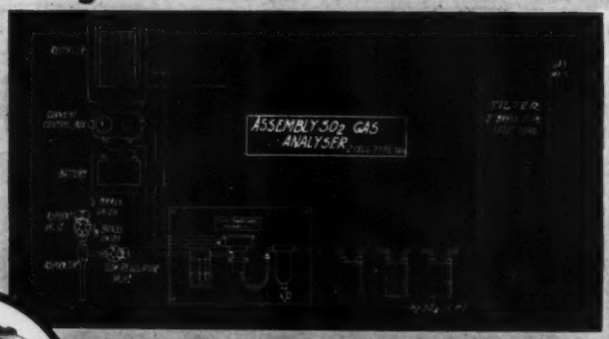
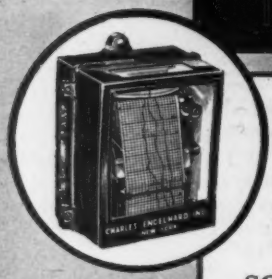
Chart to Economy via Efficiency

Engelhard Control Route





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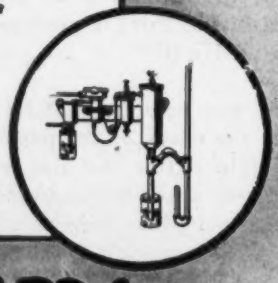

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PAPER TRADE JOURNAL

With Which Is Combined

PAPER

Vol. LXXXVI, No. 12 Thursday, March 22, 1928

Completing Improvements at Fort Edward Mill

Former News Print Mill of the International Paper Co. Has Been Turned into a Book and Bond Paper Mill at a Cost of Approximately $2,500,000—Carthage Sulphite Pulp & Paper Co. Is Ordered To Turn Over Bonds Amounting to $59,321.36 With Interest to Peribonka Co.—A Busy Straw Paper Mill

[FROM OUR REGULAR CORRESPONDENT]

ALBANY, N. Y., March 19, 1928.—The Domill Construction Company, which has been engaged since last spring on the contract at the Fort Edward mill of the International Paper Company, has completed the major part of the contract and this week turned the plant over to the I. P. Co. The contract included alterations and new construction costing approximately $2,500,000, the plant being converted from a news print mill to one for the manufacture of bond and book papers. The Domill Company has practically completed all of the work with the exception of making over two of the machines. The firm will keep a few men at Fort Edward for a time to complete minor jobs already started. At times the Domill Company has had as high as 250 workers employed on the local contract.

One wrapper machine and four bond machines are now in operation at the local mill and mechanics are rushing the work of altering the remaining two machines. It is expected that these two machines will be started up at an early date.

The Domill Construction Company has a number of other contracts for work at mills of the I. P. Co. Most of the workmen who have been employed on the local job are being sent to South Glens Falls, Corinth, and Cadyville, where work has been laid out to be started immediately. At Cadyville, where the I. P. Co. now has a pulp mill on the Saranac River the contract calls for the construction of a new power plant and at South Glens Falls numerous changes are to be made. The Domill contract at Corinth calls for the conversion of the Hudson River Mill from a news print plant to one for production of book and bond papers and will require several months to complete.

Carthage Sulphite Pulp & Paper Co. Decision

Under a decision rendered by Judge J. Samile Bouliot, of Superior Court, Province of Quebec, the Carthage Sulphite Pulp and Paper Company is ordered to turn over bonds amounting to $49,321.36 with interest from April 1, 1925, to the Peribonka Company, Ltd., of Quebec.

Action was brought by the Canadian Company against the Carthage Paper Company and Charles E. Norris as receiver, claiming that the plaintiff had a lien on $237,000 face value of the bonds of the Quebec-Saguenay Company, the lien being in the amount of $59,421.51. They demanded that defendant surrender bonds or pay the equivalent with interest.

Francis E. Cullen, of Purcell, Cullen & Pitcher, Watertown, who represented the Carthage Sulphite Pulp and Paper Company, and Mr. Norris, at the trial held at Quebec May 12, 1927, received notice of the decision. In 1918 the Quebec-Saguenay Company issued bonds amounting to $300,000 and delivered $237,000 to the National Bank of Quebec as security, first as payment of $100,000 owing the bank and secondly for payment of $75,000 alleged due to the Peribonka Company on balance of purchase price of forest lands.

The Carthage Sulphite Pulp and Paper Company loaned the Quebec-Saguenay Company more than $150,000 from which the debt of the National Bank was paid. The $237,000 Quebec-Saguenay bonds were given the Carthage Company as security. Judge Bouliot holds the bonds were not legally delivered, that the Carthage Company sold the bonds illegally, and held the lien of the Peribonka Company valid. The Quebec-Saguenay Company went into liquidation some time ago and the timber land on which the bonds are a lien were sold for $51,000, which is now in custody of Canadian courts.

Columbia Mills Running at Capacity

The Columbia Mills at Chatham Center, owned and operated by Sanford C. Haner, are running at top capacity, operating at present day and night. This plant, which is the only one in this section making rye straw paper, is producing 10,000 pounds daily of a thick heavy variety, the sort used to form the outer sides of corrugated board for shipping cartons. The raw material used at the mill consists of both rye straw and paper stock, the latter coming to the mill in carload lots from Massachusetts points. The mill at one time had no difficulty in obtaining locally all its rye straw supplies but in recent years much of this stock is shipped in from other sections of the country.

One of the Oldest Straw Paper Mills

The Haner mill is one of the oldest rye straw paper mills in New York State and is the only survivor in this section of many mills operating at one time on straw paper. Thirty years ago there were twelve such mills in this immediate vicinity, these including a mill at Barnagat, the Garner & Gilbert Mills, the Payn Mill, Morris & Boice Mill, the Spelman Mill, the Mesick Mill, the Angell & Adams Mill, and the Peasley Mill. In addition to the Haner Mill only one of these mills is operating at present, this being the former Payn Mill, now known as the Columbia Boxboard Mills, Inc., which makes boxboard.

Quebec Legislature to Protect Forest Areas

Drastic Measure Just Introduced Restricts Cutting of Every Limit Holder to Not More Than 80 Per Cent. of Annual Growth—Hydro-Electric Power Resources of Canada Largely Used By Pulp and Paper Industry—Fort William Mill Nearly Ready

[FROM OUR REGULAR CORRESPONDENT]

MONTREAL, Que., March 19, 1928.—The Provincial Government of Quebec is determined that the future of the Province's forest industries shall not be menaced by over-exploitation. Many restrictions to this end are already in force, but the most drastic of all is provided for in a measure just introduced in the Legislature by the Hon. Honore Mercier, Minister of Lands and Forests. For the past four years, approximately all leases of Crown forest areas have provided that only 80 per cent of the annual growth may be cut. The Minister now means to go further, and take in all holders of timber leases, his clause in this respect reading:

"After the 1st of May, 1930, every limit-holder shall restrict his annual cutting to not more than eighty per cent of the amount of the annual timber growth of the forest in order thus to create a reserve to provide for accidents. An exemption may, however, be made in the case of over-matured forests, and in the case of uncontrollable circumstances (fire, insect, epidemics, etc.), but the volume of such special cutting shall always be deducted from the possible maximum which the limit-holder is authorized to cut each year."

Policy Laid Down in 1927

It will be recalled that during the 1927 session the policy was laid down by the government that no more mills would be encouraged to locate in this Province beyond those then provided for, the announced purpose being to guarantee a supply of wood in perpetuity for existing mills. The additional restriction of 80 per cent cut of the annual growth follows the same direction.

The question of what forestry reserves exist in the province has been much discussed in the province, and to aid in determining this matter, the Hon. Mr. Mercier has a clause to the effect that "all timber limits under leases shall be inventoried within a period not exceeding twenty-four months after the date of the lease, by a member in good standing of the Association of Forest Engineers of the Province of Quebec, and no cutting or forest operations shall be done on such limit until a working plan, based on the inventory above prescribed, has been approved by the Lieutenant-Governor-in-Council."

Another Bill Before the House

In another bill before the House, Mr. Mercier inserts a new clause to the forest act, as follows:

"Every culler, who knowingly makes false measuring for the purpose of deceiving and defrauding the province or his employer or any other person, shall be liable on summary conviction before a magistrate, to a fine of not less than five hundred dollars, and not more than two thousand dollars with costs, or to an imprisonment of two to six months, in the common gaol of the district in which the offence was committed, in default of payment of the fine, at the discretion of the court."

Hydro Power and Paper Mills

The extent to which the great hydro-electric power resources of Canada has aided in building up the pulp and paper industry is shown by returns to the effect that 27 per cent of all the power produced in Canada was, at the end of 1927, being used by pulp and paper mills.

Actual figures covering the amount of power used at the end of 1927 show that there was a total installation in Canadian pulp and paper mills of 528,731 hp., and that in addition the mills themselves purchased from central electric stations some 774,000 hp., giving a total utilization of hydro power of 1,302,972 hp.

In this application of hydro-electric power to the pulp and paper industry one of the most important features is the electric drive. This provides the uniform feed which assures a high quality product and permits the establishment of the mill at the place most suitable from the viewpoint of operation and shipment of product. It also permits the centralized operation of large mills receiving power from several hydro-electric sources. According to statistics available, almost half the total hydraulic installation of the present paper mills is connected to electric generators by means of the electric drive. Add to this also the amount of hydro-electric power purchased by the pulp and paper mills and it is found that hydraulic turbines with an estimated total of over 1,000,000 hp. are connected to electric generators to supply the demands of the industry. This leaves only some 286,000 hp. of energy to be supplied by means of the direct drive or water wheel.

Great Lakes Plant to Begin Operating June 1

The Great Lakes Paper Company, at Westfort, Fort William, Ont.; expect to have their paper plant ready and in operation by June 1, with a news print production of 160 tons daily. It is planned to have the second machine of 200 tons daily capacity in operation by January 1, 1929. The second paper unit will have a roll of 304 inches wide—the largest machine of its kind ever constructed in the papermaking industry. Further equipment is to be added until a daily production of 1,000 tons of news print is reached.

Official Title for Forestry Engineers

Approval has been given in the Quebec Legislature to a bill of the Association of Forestry Engineers, to compel all engineers practicing forestry to become members of the professional organization.

This gives an official title and status to a number of engineers who devote their entire time to forestry matters, and offers an opportunity of embracing professional status to those who have served the necessary apprenticeship, and have the necessary educational qualifications to take up forestry, as apart from all other branches of the engineering profession.

National Forest Products

The status of the company known as Building Products, Ltd., in relation to the St. Maurice Valley Corporation, is now definitely defined with the announcement that these two companies will jointly control a new company entitled National Forest Products, Ltd. It is understood that the new company will erect a plant in the vicinity of Three Rivers and that the St. Maurice Valley Corporation will supply the raw material for making the various products, while Building Products, Ltd., will do the marketing for the new company. It is further understood that no new financing will be required in connection with the new company.

At the annual meeting of shareholders of Building Products, Ltd., approval was given to a by-law increasing the number of directors from 7 to 9. The new additions to the board, announced following a directors' meeting, are C. B. McNaught, recently appointed president of the British Empire Steel Corporation, and George M. McKee, operating head of the St. Maurice Valley Corporation. The other directors elected were Herbert Abraham, P. R. Allen, A. E. Ames, C. P. Cowan, D. P. Hatch, W. R. McNeil and H. R. Tudhope.

Philip R. Allen, the president, afterwards announced that con-

trol of Building Products, Ltd., will remain with the Bird and Ruberoid interests.

New Shawinigan Development

Following the absorption of the St. Maurice Power Company with its parent company, the Shawinigan Water and Power Company, it is now announced that the latter company is considering the development of further water power sites on the St. Maurice River. The company is now applying to the provincial government at Quebec to purchase one of the large power sites situated on the river above La Tuque. The location of the site is about 150 miles from the St. Lawrence and about 250 miles from Montreal. No information regarding just how soon Shawinigan proposes to develop the site is forthcoming.

Brompton Curtails on News Print

At the annual meeting of the Brompton Pulp and Paper Company in Montreal, H. W. Beauclerk, vice-president, stated that while the first two months of the current year had been quite satisfactory, the company was at the present time experiencing bad conditions in the news print market, stating that conditions were such in the United States that news print consumption had fallen off very substantially, with the result that operations had to be greatly curtailed. He further stated that the company was not getting at the present as good a price for news print as was the case a year ago and that production was down. In a critical vein, Mr. Beauclerk stated that while there was at the present time overproduction of about 20 per cent in the news print industry, yet new plants were still being contemplated by promoters.

Announcement was made of the retirement from the board of directors of C. C. Wilson, one of the original organizers of the company, and the election to the vacancy on the board of G. R. Cottrelle, of Toronto, an executive officer of the Canadian Bank of Commerce. Other directors were re-elected as follows: E. W. Tobin, M.P.; H. W. Beauclerk, J. A. Bothwell, J. N. Greenshields, K.C., Dr. Milton L. Hersey, J. E. McCrea, W. N. Munroe, H. E. Munroe, C. G. Greenshields, K.C., R. W. Steel and F. W. McCrea.

St. Maurice Valley Corp.

The second annual report of the St. Maurice Valley Corporation for the year ended December 31 last, shows earnings equal to $6.36 per share on the company's 160,000 no par value common shares outstanding at the end of the year. This compares with $8.47 per share on the common for the preceding thirteen-month period. A feature of the balance sheet is an increase in working capital of three and one-half million dollars.

Gross profits for the year are shown at $4,689,673, as compared with $4,735,856 in the preceding thirteen-month period. Deduction of interest at $1,397,708 and depreciation at $1,243,384, left net profits for the year at $2,048,581. Preferred dividends were paid out during the year amounting to $1,028,598 and common dividends on the Belgo-Canadian minority common stock at $2,217, leaving $1,017,766 as a surplus for the year.

Working capital is shown at $8,891,811 in the current report as compared with $5,283,886 at the end of the preceding year. Inventories are shown higher by 1¼ million in the current report.

The figures cover the parent company's operations and those of the two companies now consolidated with it, the Belgo-Canadian Paper Company and the Canada Paper Company.

Buys W. A. Cole Paper Co.

[FROM OUR REGULAR CORRESPONDENT]

SPRINGFIELD, Mass., March 20, 1928.—William Lay of Bridge street has bought the W. A. Cole Paper Company plant and business at Putney, Vt., from Atty. Frank E. Barber of Brattleboro, Vt., who has been the principal owner for the past two years. In exchange for the mill Mr. Lay transferred a five story block in Springfield. The paper company has been reorganized with Mr. Lay as president. The Cole mill manufactures tissue paper and employs about 30 hands.

File Brief With Commerce Commission

A number of briefs were filed this week with the Interstate Commerce Commission in the fight of New York State paper mills to obtain lower rates to central freight association territory so that they may be able to compete with the mills of Wisconsin Rapids and other cities in the so-called "Fox River group" of Wisconsin. One brief was by the St. Regis Paper Company and the Taggart Brothers Company, of Watertown, main battlers in the freight rate fight. Another was by the International Paper Company having mills in Upper New York State, New England and Canada. This latter brief asserts that Glens Falls, N. Y., should benefit by a rate reduction and that it is unfair to exclude Corinth, Fort Edward, Glens Falls and Warrensburg from the base group.

The third brief is by the Iroquois Pulp and Paper Company, of Thomson, signed by J. D. Greene, traffic manager, which objects to being included with the other "fighters" and wants a rate reduction even lower than that asked by the others.

A plea for the Commission to aid in the prosperity of Northern New York is set forth in the brief of the St. Regis and Taggart Brothers Companies. Depletion of the forests there, the trend of the paper mill industry toward Canada and the campaign to reforest the entire section are told in detail. The brief says that J. A. Quinlan, traffic manager of the St. Regis Company, has "graphically" told the story of Canada's tremendous gain as compared with the United States in the matter of news print production. He shows that the United States mills have little more than held their own while the Canadian production has been increasing by leaps and bounds. In 1913, Quinlan said, the Canadian production was only 350,000 tons and that of the United States 1,305,000 tons. In 1926 Canada was leading with 1,882,000 tons as against 1,686,000 for the United States.

"This tendency threatens to bring disaster to Northern New York," says the brief. "Nothing but the utmost courage and efficiency on the part of the United States producers coupled with a reduction in freight rates can save this essential industry."

The New York Central is described as the enemy of Northwestern New York in this contest, the brief stating: "The paper industry in Northern New York does not appeal to the Commission for sympathy. It must and will overcome the natural disadvantages under which it is laboring. But it does protest against unnatural disadvantages and against the New York Central's policy of denying to this territory the advantage of location which nature has bestowed upon it."

Referring to their western competitors the upper New York mills see unintended aid given their cause. "Complainants," they say, "regard it as most significant that spokesman for both the G. H. Meade Company, representing a large number of Canadian mills, and the Wisconsin Paper and Pulp Manufacturers Tariff Association, representing a large number of Wisconsin mills, agree with the main contention of complainants, namely, that the Eastern blanket as now constituted is too large and that it should be divided into smaller and fairer groups."

G. W. Mead May Oppose LaFollette

Friends of George W. Mead, president of the Consolidated Water Power and Paper Company, of Wisconsin Rapids, Wis., are considering the circulation of petitions to put him in the race for United States Senator in opposition to Senator Robert M. LaFollette. Mr. Mead is in Florida, however, and has not expressed his views on the matter.

The manufacturer made his entry into politics two years ago when he was elected mayor of Wisconsin Rapids on the volition of employees in his mill. He has announced himself a candidate for re-election and apparently has no opposition. It is believed that his popularity with the labor unions and his wide acquaintance and ability give him qualifications by which he could defeat Senator LaFollette better than any other Wisconsin man.

Chicago Paper Market Enjoys Favorable Trend

Dull Conditions of Late Autumn and Winter Months Gradually Wearing Off as Sales Efforts Are Redoubled—Heavy Production of News Print Paper Being Freely Absorbed By Consumers—Fine Papers, Book and Cover Papers, in Much Better Request

[FROM OUR REGULAR CORRESPONDENT]

CHICAGO, Ill., March 19, 1928.—Business conditions in the Chicago paper market continue to be favorable as the weather gets more springlike. The dull conditions of the late fall and winter are gradually wearing off as sales efforts are redoubled. A number of paper men were sighted at the Third International Golf Show, now being staged at the Hotel Sherman. Among the lot were a number of salesmen already getting pointers for the summer tournaments of the Salesmen's Association of the Paper Industry.

To go back to business conditions, news print continues to go along in very favorable shape, with heavy production being taken up by demand. Papers in use for direct mail advertising are also finding a better market and the increased use of all kinds of advertising is worthy of note. The increased number of expositions in all lines of industry also helps to stimulate the demand. One may walk down aisle after aisle and pass booth after booth and see loads of printed matter enticing the passerby to closer inspection.

Book and cover papers are stronger and the tone of the market is excellent. Fine papers, picking up very noticeably last week, continued to be in much better demand and the spirited condition of this branch of the paper industry is creating a lot of optimism for the spring and early part of the summer. Kraft papers improved this week.

Resignation of W. H. Lyon

William H. Lyon, of the Blunden-Lyon Company, has resigned from his duties as president and general manager after sixteen years of service in which he has seen his company grow with the increasing development of the paper industry. F. E. Blunden and Mr. Lyon founded the company in March, 1912, and the business of the organization has grown steadily since that time. Mr. Blunden resigned in 1922 and moved to Los Angeles. The Blunden-Lyon Company specialized only in high grade bonds and ledgers until about two years ago, when coated and uncoated book papers were added as regular lines. Mr. Lyon sold his interests in the well known organization to other stock holders and the general policy of the company will not be changed under the new management.

The following officers have recently been elected: I. Henry Reid, president; Elliot H. Fulton, vice president; Charles W. Fisher, treasurer; George W. Ross, assistant treasurer; Arthur V. Selig, secretary and Henry A. Fulton, assistant treasurer. Offices of the company are at 323 West Polk street.

Barton-Hobart Changes

The Barton-Hobart Paper Company, 111 West Washington street, has changed its name to the Hobart Paper Company, having been actually in operation under that name since January 1. Mr. Barton severed his connections of long standing with the organization nearly a year ago. H. B. Hobart, the other partner, now is president of the Hobart Paper Company with E. A. Stein as secretary. The organization is seventeen years old and enjoys a wide patronage in its function as direct mill distributor for a variety of lines.

Great Western Opens Chicago Offices

E. A. Kennedy is in charge of the new Chicago offices of the Great Western Paper Company, Ladysmith, Wis., which were opened in the Conway Building, 111 W. Washington street, last week. Mr. Kennedy has been connected with the mills for a number of years and his experience will stand him in good stead in his dealings with the trade. The territory now covered by Mr. Kennedy was formerly taken care of by George Johnston, out of the offices of the Western Newspaper Union of Omaha. Mr. Johnston's new connections with the Champion Coated Paper Company as manager of the New York office necessitated the establishment of the Chicago office. Miss Noble, formerly in the offices of the Western Newspaper Union at Omaha, is taking charge of the detail work in the new offices of the Great Western Paper Company in Room 1920 of the Conway Building.

News of the Trade

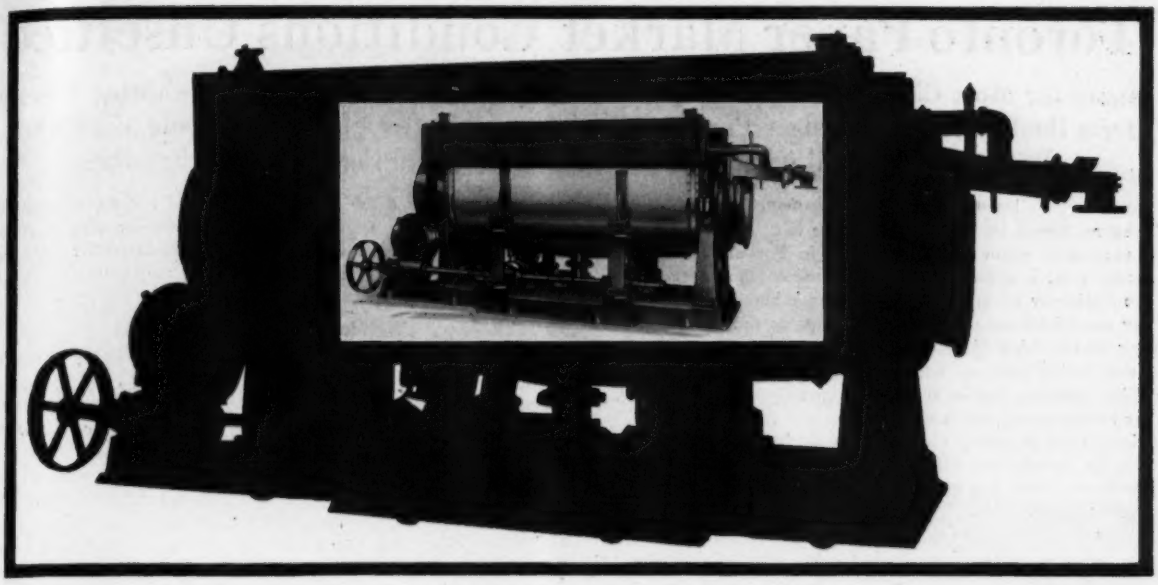
Westvaco Inspirations for Printers, Number 33, has recently been sent out to the trade. Its title is "Modernism as an Inspiration for Printers." Beautiful exhibitions of color work in the modernistic lines are printed on Westmont Enamel. Photograph reproduction on Westvaco Inspiration Super and the exotic modernistic touch of the black and white on Westvaco Inspiration Eggshell are also included in the interesting contents. Educational editorial matter on the introducing of color into a black and white illustration, on the modern "radium illuminated" advertising and on the type of advertising that appeals, combines with the illustrations to make a very readable and picturesque edition of Westvaco Inspirations.

James Smith, advertising manager of the Chicago Paper Company, has been away from his desk for about ten days, first with some sickness of his own and later because of the illness of his child which caused the house to be quarantined. Mr. Smith is chairman of the Marketing Committee of the National Paper Trade Association and he was largely instrumental in bringing the plan of that committee to its present state of perfection. It has been reported in Chicago that Canadian houses are very strongly in favor of the plan of publicity and advertising now being put under a final discussion by a committee appointed at the recent meeting of the National Paper Trade Association.

The Paper Mills Company has issued samples of five new lines of paper manufactured in foreign countries. All of the lines are excellent products and well adapted to their uses. One was manufactured, hand made, in Germany, another hand made in France, another from England and two hand made in Japan. The Fox River Paper Company, Appleton, Wis., has appointed the Paper Mills Company as Chicago distributors for their complete line of Credit Ledger.

The Pilcher-Hamilton Company is now firmly settled in its new home at 349 West Ontario street. The building is modern in every respect and has three stories and a full basement. It is of brick and steel structure and is excellently adaptable for offices and warehouses. A railroad spur in the rear of the building makes it possible to unload paper into the warehouse or directly on to trucks for delivery. A well protected and sheltered loading platform provides sufficient space for five trucks at one time. Half of the second floor is given over to the offices of the Pilcher-Hamilton Company. Private offices are provided for executives and all are equipped with every modern business convenience. A conference room, a salesmen's meeting room and a rest room for female employees combine to make the layout perhaps the most tasteful and efficient of any paper house in the country.

The La Salle Paper Company, 847 W. Adams street, has a new line of paper known as Clydesdale Linen of excellent quality and well suited to its purposes.



Why twenty odd thousand tons of paper pass through Bird Screens daily

The Bird Screen produces uniformly clean paper continuously.

It has very great capacity whether figured in terms of daily or yearly output.

Its operating and maintenance cost is extremely low.

It handles all grades of stock with equal success.

In a word it fulfills every screening requirement. It is the kind of screen paper makers want—the kind *you* want.

BIRD MACHINERY

BIRD MACHINE COMPANY
SOUTH WALPOLE - - MASSACHUSETTS

BIRD SCREENS

1735

Toronto Paper Market Conditions Unsettled

Demand for Most Classes of Paper Continues Fairly Good—Continued Price Cutting Wave Affects Book, Bond and Ledger Papers Adversely—Light Weight Paper Trade Excellent, With All Grades Moving in Good Volume—Coated Papers in Fair Request

[FROM OUR REGULAR CORRESPONDENT]

TORONTO, March 19, 1928.—While there is a fair volume of business passing in wholesale paper circles in Toronto and district it is hardly what it should be at this season of the year, according to the testimony of many of the leading jobbers. For one thing selling conditions are unsatisfactory owing to the continued price-cutting wave which hit the wholesale paper trade several weeks ago and which goes on unabated and which promises to affect the mills, more or less by reason of generally unsettled conditions as far as fine papers are concerned.

Price-cutting is largely confined to book, bond and ledger papers and so far none of the other classes of paper have been affected, although the paper bag industry is suffering from the same cause. The thing, as far as fine flat papers are concerned, has reached the proportions of a small war, with the printing trade reaping the benefit of cheap paper. Converting lines such as stationery, are also being manufactured from cut-rate paper being supplied by the paper mechants. Generally speaking, were it not for the price-cutting evil which has developed among a section of the jobbers, business in the wholesale paper line would be fairly good for there is quite a fair demand for most classes of paper.

The light weight paper trade is in excellent condition, with good demand for all classes of tissue, toilet and specialty lines, while grease proof, waxing and glassine papers are selling in good volume. Mills making the latter lines are particularly busy and book paper manufacturers have orders ahead for several weeks. Indeed it looks like an extremely busy summer among the book mills. Coated paper mills are about eighty per cent employed with the product in fair demand, while there is generally a good call for bonds and ledgers both for domestic use and for export.

Canadian book and writing firms, however, will have a considerably reduced market in New Zealand for their papers by reason of a change in the New Zealand tariff. For a great many years there has been a duty of 20 per cent operating against foreign printings and writings of all descriptions, while similar papers made in the British Empire have been allowed into New Zealand duty free. The Government of that country has now removed this 20 per cent preference the Canadian trade was enjoying and the classes of paper noted from all over the world, British or foreign, now goes into New Zealand duty free. Canadian-made papers have been extremely popular in New Zealand but the new ruling by the Government of that country is going to make it difficult for Canadian manufacturers to continue shipments to that market in competition with the papers of other countries.

Deplores Loss of Timber and Pulp

By special request of the Chambers of Commerce of Fort William, Ont., and Port Arthur, Dean C. D. Howe, of the Ontario Faculty of Forestry, has just delivered nine lectures at the head of the lakes as part of the regular extension work of the University of Toronto. In his lectures the Dean, who is head of the Forestry Research Bureau, stressed the disastrous but inevitable waste of timber and pulp wood in Ontario. He pointed out that Douglas fir from British Columbia is being shipped via the Panama Canal and is underselling white pine in Ottawa and other homes of the local timber. White pine, he thought, is now on its death bed as it takes two years to get the logs from the limits to the mills, since forest fires and other unnecessary wastage have pushed the timber line so far away. As a result of this long journey for the logs, the United States market has been lost for Ontario and Quebec and where one billion feet of pine were cut here 30 years ago, only 192,000,000, or one-fifth were cut last year. Speaking of the aerial patrol of the forests, he stated that the area burned has been decreased by 500 per cent in the past three years, but the number of fires has remained the same which shows that the fool is still in the forests and only education can lessen the fire hazard.

Well-known Paper Man Killed

Paul Fleck, aged 27, employed in Toronto as agent of pulp and paper interests at Georgetown, Ont., and son of L. E. Fleck, president and general manager of the Georgetown Coated Paper Mills, met his death at the King Edward Hotel, Toronto, a few days ago, when he fell over a banister rail, on the fourth floor, a distance of 30 feet. He alighted on his head, fracturing his skull, and died a short time after being admitted to the hospital. There were no eyewitnesses to the tragedy and the fatality is believed due to the victim losing his balance as he was descending the stairs. The late Paul Fleck was widely known in the paper industry in Ontario and his untimely end is deeply regretted by a wide circle of his and his father's friends.

Board Mills Are Busy

Board mills throughout Canada are busy and are running close to capacity. Two of the leading paper board companies, Canadian Paper Board and Dominion Envelope and Carton Company, both Ontario concerns, are fast completing their new plants on the water front in Toronto and will be in production during the summer. The machine room of the former company has already been completed. Board has been stable in price for many months and although there has been talk of an upward revision, no definite step toward that end has as yet been taken. This has been viewed favorably by the paper box industry in Canada, which is prosperous, for changes in board prices generally mean price list revisions for paper boxes and a more or less unsettling process in the trade. The paper box industry enjoyed an excellent pre-Easter trade and the outlook for good business throughout the spring and summer is good.

News and Jottings of the Trade

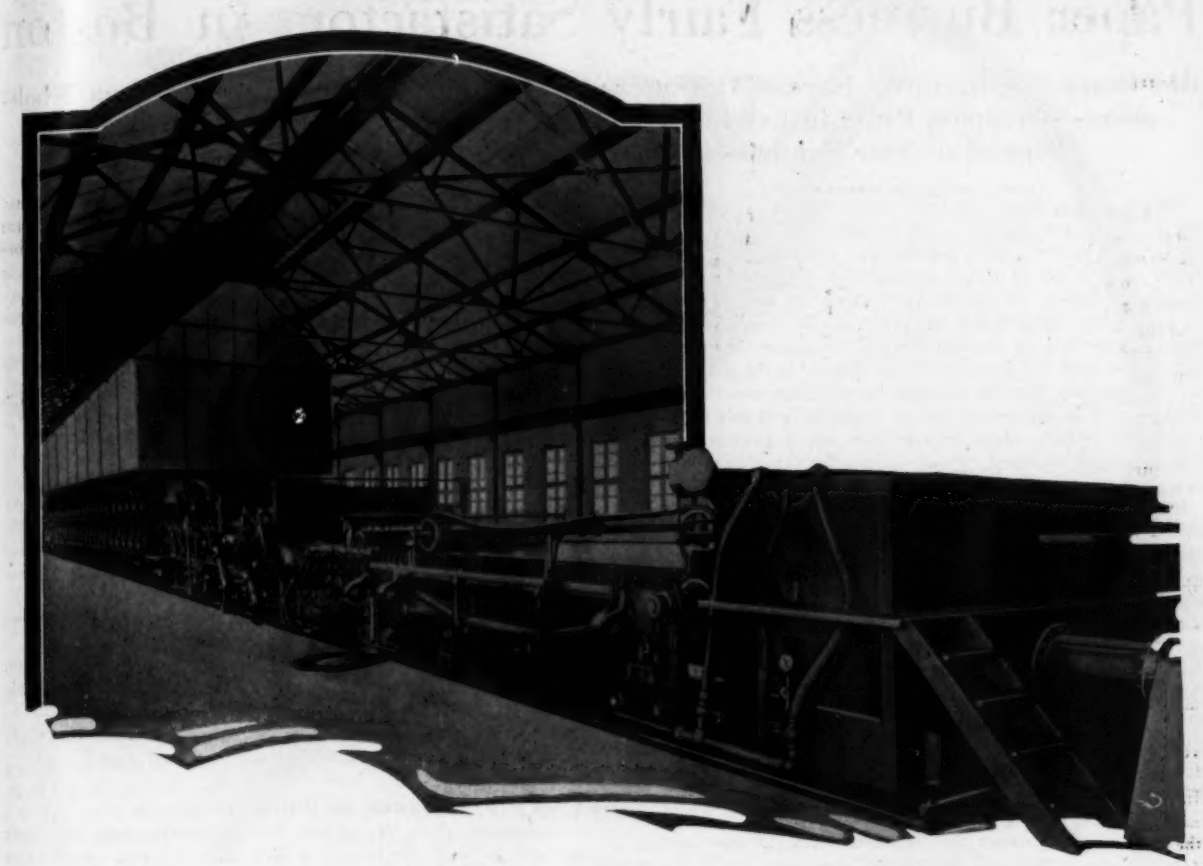
Miller & Richard, type founders and printers' supplies, Mutual street, Toronto, have been appointed agents for Canada and the United States of the paper box making machinery lines manufactured by Vickers, Ltd., England. F. A. Lewis, who gained his initial paper box making experience with the Casco Paper Box Company, Portland, Maine, is in charge. Mr. Lewis was also formerly with Abitibi Power and Paper Company, Iroquois Falls, Ont., and the Hobbs Manufacturing Company, Worcester, Mass.

A gold wrist watch was recently presented to Art Allen, of Paper Sales, Ltd., Toronto, by the Toronto Carton Council in recognition of his valuable services in connection with the Toronto Carton Council and Associate Members' Bowling League, which has just closed its season. The team captained by William Logie won the W. P. Bennett Cup.

The Acme Paper Box Company, Ltd., Toronto, has been incorporated with a capital of $40,000. The provisional directors are W. J. Bradley, M. Jacoby and B. Ross, Toronto.

Word from Jamaica is to the effect that W. J. Parks, of the Interlake Tissue Mills, Ltd., Thorold, who has been spending some weeks there, is very much improved in health. He expects to return to his work around the middle of April.

James N. Silk, Australian Trade and Customs representative, with office in New York City, has been spending some time in Ontario checking up on values of the products of the various paper mills in the province for export purposes.



Wire Changed in 1 Hour

The operations required in making wire changes on the Keystone Removable, Quick Change Fourdrinier are extremely simple.

The Kilberry Suction Couch Roll is moved longitudinally by power and suspended from rear journal for quick and convenient change of wire.

Independently removable table roll and suction box sections, with power raising and lowering device, simplify pitch adjustment of wire and lowering onto the rails. Easily hand removable on roller bearing trucks.

Shake adjustable while running. Breast roll and table rolls shake independently of the rigid supporting frames. Bronze table roll support frames give great strength and stiffness without excessive weight.

Let us send you complete information on the numerous advantages of the Keystone Fourdrinier.

Our Products Meet Our Promises

DOWNINGTOWN Fourdrinier

Downingtown Mfg Co. Downingtown Pa.

Paper Business Fairly Satisfactory in Boston

Box Board Manufacturers Increase Operations On Account of Greater Demand From Wholesalers—Wrapping Paper in Excellent Request With General Expansion of Industry Anticipated in Near Future—Outlook for Sulphite Bonds Particularly Bright

[FROM OUR REGULAR CORRESPONDENT]

BOSTON, Mass., March 19, 1928.—Improvement has been developing in the paper market. Dealers generally report at least a fairly good business, with prices firm. Some say that there is a better outlook this month, particularly on high grade stock, such as sulphite bonds. In certain quarters of the market the volume of orders has lessened, but the profit has been satisfactory. Although some find no snap to the call for paper they confidently expect that there will be a more lively demand in the not far distant future, especially when the weather becomes less unsettled. Wrapping paper is in greater request, as it usually is at this time of the year, with retailers showing new lines and a general expansion looked for, but no boom. Paper for textiles is rather quiet, owing to a slackness in some of the cloth mills.

Business in box board has been fairly gratifying. It is reported that box board manufacturers are increasing their operation, due to the improvement among wholesalers, at least in some sections and some lines. Prospects appear favorable, although in some quarters it is said that orders lack "pep," but that the volume is fair. At the Boston office of the United Paper Board Company and the Wabash Coating Mills, it is stated that there is a good business in the New England territory. Prices are maintained at about the same levels, although rumors of expected lowering of value on chip board to $42.50 persist, but this figure refers to inferior grades. The price for standard chip board remains at $45 and $47.50 for filled news board. Single manila pulp lined board continues quotable at $55 to $60.

Paper Stock Market Improves

A better feeling exists also in paper stock, at least among a portion of the trade, while others say they have had no inquiry for some time. There has been a good business with some for old papers and rags. Old domestic cottons, such as thirds and blues, have moved in fair quantities. Repacked are quotable at 2.00 to 2.12½, f.o.b. Boston, and miscellaneous at 1.75 to 1.90, f.o.b. Boston. A salesman who traveled about New England last week, calling at 25 mills, found more optimism than pessimism, with considerable activity in all except one paper making center. In several cases he was obliged to turn down orders because of inability to obtain the stock. The market for cotton twines continues steady.

New Paper Concern Chartered

H. H. Rutter and W. E. McNaught have purchased the stock and assets of the white paper department of the Globe Paper Company. The business will be carried on under the name of Rutter & McNaught, Inc., with Mr. McNaught as president and Mr. Rutter as treasurer, at the same address, with offices at 170 Summer street and warehouse at 46-48 Midway street, Boston. The new corporation will handle the same lines which the Globe Paper Company sold. Mr. Rutter was one of the founders of this business and Mr. McNaught has been with the Globe Paper Company for several years.

Miscellaneous Trade Notes

The Hollingsworth & Vose Company is introducing new grades of Bristol Board to their lines of manufacture, known as the Squannacook Bristol and the Squannacook Envelope Manila. The concern has been very successful in marketing these lines. The Squannacook Bristol is carried in stock at the mill in one size and weight, 22½x28½—110, and in seven colors, green, blue, red, brown, yellow, pink, and salmon. The Envelope Manila is a strong, durable paper, adaptable to the use of the manufacturer of heavy duty envelopes.

J. M. Mulcahy, formerly of the L. P. Winchenbaugh Company, has taken over, under the firm name of the Crehan Company, the specialty lines carried by the L. P. Winchenbaugh Company before the closing of that concern. The new company intends to carry the same general line formerly handled by the L. P. Winchenbaugh Company, including high grade and medium grade papers, Bristols, announcements, wedding, bordered panel cards, and specialties for the printing trade. Mr. Mulcahy has had an experience of 18 years in serving that trade. The office of the company is centrally located in the Wentworth Building, 170 Summer street, opposite the South Station.

The Von Olker-Snell Paper Company has added to its lines a cabinet of Atlantic Bond, containing 125 sheets and 125 envelopes, executive size. The paper and envelopes are packed in different compartments, so that it will not be necessary to lift up the envelopes in order to take out the paper. They are intended for use by executives, high grade business correspondents, and professional people.

A. W. Blackman, president of D. F. Munroe Company, sailed for Bermuda March 10, expecting to remain there until April.

H. R. Woodward and William A. Lagarde, of the Train Smith Company, are attending the Convention of the National Association of Waste Material Dealers in New York City this week.

John Gilmore, representing the District of Columbia Paper Manufacturing Company, called on the trade last week.

Backus to Build New Line

Application of E. W. Backus, the Minneapolis pulp and paper magnate, to build the Kenora & Red Lake Railway, came before the Ontario Legislature in Toronto this week, in the form of a bill of incorporation under which Edward Wellington Backus, Seymour Wellington Backus, William Brooks, George McLean and Donald McLeod are shareholders of the company which proposes to build the road, and are also provisional directors. The bill, if passed, will authorize and empower the company to survey, lay out, complete and maintain a standard gauge railway to be operated by steam or electricity from a point near or at Kenora, Ont., to Red Lake. Capital stock of the company, according to the bill, shall be $5,000,000. Power is also sought giving the company the right to issue bonds, debentures or other securities to the extent of not more than $1,000,000. Wide powers are sought in the bill, authority being asked for the right of construction over Crown lands; the wide right to cut timber on Crown lands and the development of electric power for its own operation and to sell the surplus at such terms as may be fixed by the Ontario Government.

John T. Moore Dead

[FROM OUR REGULAR CORRESPONDENT]

BELLOWS FALLS, Vt., March 20, 1928.—John T. Moore, 89, last of the pioneer paper manufacturers of this section, died at his home here Saturday morning. He was born in Westminster, Vt., beginning the manufacture of paper in Putney. He came to Bellows Falls in 1872 with the late John Robertson, building and operating a mill under the name of Robertson, Moore & Co. He continued in that business until he retired, January 1, 1917. He married Lucy A. Pierce of Westminster who died in 1910. They had one son, Col. Caroll A., for many years with his father in paper manufacturing under the name of John T. Moore & Son. The funeral was held this afternoon with burial in the family lot in Oakhill cemetery.

WALDRON Paper Rolls

Cost Less to Use Because They Stand Up Longer In Service

Made of Only The Best Paper To Insure Long Life and Lasting Quality.
Paper Carefully Conditioned To Insure Proper Moisture Content.
Shafts and Heads Exactly Proportioned To Withstand The Tremendous Pressure Used In Compressing Waldron Rolls.
Held Under Pressure Proper Length Of Time To Thoroughly Meet Our Exacting Tests for Hardness and Head Balances.

Write for your copy of this instruction sheet

A Copy Will Be Gladly Sent To You On Request!

How a Paper Roll Should be Run In!

JOHN WALDRON CORPORATION

MAIN OFFICE AND WORKS, NEW BRUNSWICK, N.J

208 W. Washington St. CHICAGO

30 East 42nd Street NEW YORK

Paper Demand Below Normal in Philadelphia

Many Problems Confront Distributors Due to Prevailing Hand-to-Mouth Purchasing for Day to Day Requirements—Southern Kraft Market Now Established On Firmer Foundation With Advanced Quotations Predicted for Late Summer Months

[FROM OUR REGULAR CORRESPONDENT]

PHILADELPHIA, Pa., March 19, 1928.—Though hand to mouth business continues to broaden, there is lacking the normal revival customary with the approach of springtime. As dealers conduct business with increased overhead because of the growing tendency to confine orders to immediate needs only, and shipping charges grow with the custom of restricted paper demands, many problems confront the distributors who must perforce abide by the hand to mouth buying terms in order to hold customers. It is quite certain that present business is being conducted either at a loss or on a very narrow margin of profit because of the restricted buying and the determination of consumers to cautiously confine purchases to the frequent shipments of day to day requirements, or for a limited supply to cover a few days at most where contracts do not prevail, as among the larger printing and publishing houses or larger manufacturing and mercantile industries.

High Cost of Hand to Mouth Markets

This tendency to restrict demand to the immediate needs of the consumer is leaving a toll of unprofitable business to both mills and distributors. The paper merchant is obliged to carry a limited stock on hand in order to avoid waste and so is prone to carry only standard grades of every day demand in quantities that will cover his type of trading. Now that the coming spring brings a demand for seasonable wares he is not able to meet the urgent needs of his customers and so has been caught short handed for the salable goods owing to his limitations in stocking. Mills have not been able to produce in advance for stocking and so when orders are sent to the manufacturers a fortnight's delay is necessitated before shipments can be made. In the meantime the consumer is obliged to dispense with the orders placed as he, too, has been caught by the cautiousness that has held industry within bounds ever since the first of the year.

Kraft Market Analyzed

From present indications the kraft market is judged to be established on a firmer foundation for improvement with the coming summer months. A fortnight ago there was intimation that prices on southern kraft were to be advanced by the manufacturers who had been well booked ahead under the quotations made when campaigning for orders was rampant in the early January days. Now comes notice from one of the larger southern producers that present values will be maintained until July when an advance is expected and prices now quoted withdrawn.

From the far western manufacturers who in early January made an initial campaign of the Philadelphia trade for business in kraft specialties comes a further convincing evidence of the brighter turn for the kraft market and firming values as a stabilizing market influence. This large Western mill which came here with one of the most attractive offers ever made to the trade, despite the long distance haul through the Panama Canal, now states it has raised the cost to the dealers with a fractional advance. The previous offer made in January gave sufficient tonnage orders to keep operations for several months. This tonnage was secured under the most lucrative terms of payment and the kraft was of excellent quality offered a little less than that made in the southern field, where Philadelphia consumption holds no mean importance in the mills.

Price and Pierce Offer New York Kraft

When representative William B. McGoldrick made his advance call on the trade for spring stocking purposes he introduced the newest of products to be made by the Price and Pierce, Ltd., in the Moss Point, Miss., Mills. This new product is a grey kraft of excellent quality and compares favorably with other of like manufacture. It is slightly higher than brown krafts made by the company. Prices of the krafts made by this company have not changed and the volume of shipments for this season are fairly well maintained.

Tissues Offered by White-Washburne Company

With the call on the Philadelphia dealers of Representative Johnson of the White Washburne Company, with mills at Hinsdale, New Hampshire, the local distributors were offered attractive propositions in tissues of many grades that are in timely and seasonable demand. There has been a fairly active market here for many of the sanitary tissues and among them those offered by the White-Washburne Company which have moved in good volume.

Thomas R. Wharton Joins S. S. Garrett

Thomas R. Wharton who for the past 15 years has been connected with the Union Bag and Paper Corporation has severed his connection with that concern to join the staff of S. S. Garrett, extensive dealers in wrapping papers and specialties, 248 S. 3rd street. His duties with his new connection will be those assigned to the eastern sales territory as Assistant Manager. His long association with the Union Corporation gives him a wide range of sales experience in coarse grades as an attache of the Philadelphia sales office and warehouse staff.

New Superintendent for Container Corporation

Taking up his duties in the newly created position as supervisor of production of the paper board mills of the Container Corporation of America, with a large plant located in the paper manufacturing section of Manayunk, Benjamin M. Thomas will join the local concern on April 1. He will be the general superintendent of the container plant here following his association with the Dixon Board Mills, Inc., of Carthage, Ind., where he was vice president of the company. The position of general superintendent is a specially created one that is effective with the sojourn of the new associate with the Quaker City mills of the Container Corporation of America. With the return of W. G. Carey, general manager of the Container Corporation local plant from his vacation spent in Florida the new superintendent begins his duties.

Container Corp. to Build Corrugated Plant

A large additional building is now in process of construction on the site of the plant of the Container Corporation of America. This structure will be given over to a new business enterprise for the Philadelphia branch of the corporation—that of production of corrugated products. Heretofore the local plant has been chiefly concerned with the manufacture of paper boards and shipping containers made of fiber boards.

Ajax Mills Temporarily Suspended Production

Pending the adjustment of its business under the recently appointed receivership, the Ajax Paper Mills, of Buck Run, Pa., have temporarily suspended. The trade associates of the Ajax Mills have been informed that all products have been withdrawn until the receivers have taken hold of its business conduct. Two receivers have been appointed to adjust the financial obligations of the tissue and sanitary products manufacturers under friendly proceedings to conserve the assets of the company, that are far in excess of its liabilities. The receivers are W. E. Greenwood and

MORE HISTORY!

"Simple facts not foolish statements."

Dilts NEW TYPE Beaters on Kraft

Chapter XII

A prominent Ohio mill writes about our rebuilt beaters as follows:

> **"Doing splendid work and giving the best of satisfaction."**

History repeats itself. They subsequently gave us orders to rebuild the balance of their liner beaters. These held 900 lbs. and now they carry 1800 lbs. With no appreciable increase in power they circulate much faster and the quality of the stock is greatly improved.

You should look into this. There are perhaps 1500 Dilts Beating Engines in service. Also many beaters of other makes that we have rebuilt to the Hollander or the NEW TYPE design. We strongly recommend the NEW TYPE because we find that wherever Dilts NEW TYPE tubs or beaters replace old styles the result is amazingly satisfactory and always proves the superiority of the Dilts NEW TYPE.

Write to us. You cannot afford to wait. "Your paper is made in your beaters."

Dilts

MACHINE WORKS, Inc. FULTON, N.Y.

EXPORT OFFICE ~15 PARK ROW~ NEW YORK CITY

V. R. Hann. It is expected that but a brief time will elapse before production is again resumed. This suspension of the Ajax Mills will, it is believed, stabilize the local tissue market, as much of the sanitary products and tissues consumed here are shipped from the nearby mills of that company.

Frank E. Winslow Recovers

Frank E. Winslow, who is well known to the paper trade as the paper mill specialist of the General Electric Company, covering the eastern and southern mills, has recovered from his recent illness and long confinement to the hospital, where he was operated on for appendicitis. His first round of the trade was made last week, when he toured Lancaster County and York, Pa., mills after a brief sojourn at the General Electric plant in Lynn, Mass., in an educational survey of new devices that have been perfected by that company. His headquarters are in the Philadelphia branch of the General Electric, where he conducts all paper mill business.

Jessup and Moore Secures Government Contract

The Jessup and Moore paper mills of Wilmington, Del., have been awarded a contract under government bid for book papers and other specialties, in fine papers. While the mills are located in Wilmington, the headquarters of the company are located here in the Commonwealth Trust Building, 15th and Market streets. The contract covers a long term of deliveries.

Paper Trade Meets in Quarterly Session

An interesting talk on credits was the main event of the quarterly meeting of the Philadelphia Paper Trade Association held last Thursday in the Chamber of Commerce. With the recently elected president, Simon Walter, of S. Walter, Inc., presiding, the usual routine of business was reviewed and then the session turned over to the main speaker, W. Dayton Shelley, treasurer of the John B. Stetson Company, and president of the Philadelphia Association of Credit Men. An outline of the new system for securing reports on accounts and other credit information was given for the benefit of the paper men.

Wholesale Paper Merchants Outing

Plans for an elaborate program of sports and other outdoor diversions are in the making for the Philadelphia Wholesale Paper Merchants Association, according to plans that were discussed at the meeting of that organization last Friday in the Benjamin Franklin Hotel. The meeting was the monthly session of the wholesale representatives and mill agents who are enrolled in the body. The outing will be held this spring and more definite plans will be prepared and laid before the members by E. I. Richards, who is in charge of arrangements when the organization meets next month.

Rotogravure Discussed by Paper Man

A recent survey made in an effort to determine what section or feature of the Sunday newspapers was best liked by the public resulted in the disclosure that the majority of readers favored the rotogravure section, according to Frank L. Blake, in charge of the Rotogravure Development Department of the Kimberly-Clark Paper Company, who addressed the Poor Richard Club, last Thursday. "The success and growth of the rotogravure section of our newspapers during the past few years bears out the statement that we are living in a picture age," Mr. Blake said. "Advertisers have come to the conclusion that they bring the attention of the buying public to their merchandise by use of photographs in advertising in the rotogravure section, because, no matter to what size the picture is enlarged, rotogravure treatment does not spoil or detract from the tone.

"Many merchants are of the opinion that this form of advertising is only beneficial to large communities. This is not true. One of the largest users of rotogravure advertising in Chicago is a milk dealer, and although this article sells only for ten cents, the dealer finds that such advertising increases his sales."

Heads Los Angeles Paper Mfg. Co.

[FROM OUR REGULAR CORRESPONDENT]

LOS ANGELES, Cal., March 16, 1928.—Robert E. L. Brown was elected president and treasurer of the Los Angeles Paper Manufacturing Company at a special executive meeting called to fill the vacancy left by the death of his father, Joseph Brown, Sr., founder and former president, who was killed in a traffic accident several weeks ago at the age of 90.

Joseph Brown, Jr., as vice-president, was made general manager; Harold D. Brown was elected secretary, and N. L. Brinker retains his position as director of sales.

R. E. L. Brown, who formerly occupied the position of secretary-treasurer, said the general operation and policies of the company would be carried out along the lines established and maintained by his father from its inception, more than 27 years ago.

"We have almost literally grown up with this business," said Mr. Brown. "It is not a case of a new management stepping in, for we have been actively identified with the administrative affairs of the company for many years. As fast as each of us qualified for positions of greater responsibility we were moved into them and thus have been actively in charge of affairs of the company for some time.

"Father was a strong advocate of square-dealing. He built this business on a quality foundation. As a result, our products established a reputation that has steadily increased demand and made repeated plant additions necessary and rapid extension of markets possible.

"Equipped with the best machinery obtainable for the manufacture of asphalt roofing and shingles, our plant has steadily grown and now represents an investment of more than $1,000,000.

"Our roofing products are now distributed throughout the Pacific coast region and are being exported in constantly increasing quantities to Hawaii and the Orient."

Miss Minor With N. E. Laboratories

Miss Jessie E. Minor, whose name is well known in the paper industry as a result of her work as paper technologist in different laboratories and mills throughout the country, covering a period of ten or fifteen years, is now associated with the New England Laboratories as technologist in charge of the Pulp and Paper Division. This division is really the Pulp and Paper Division of the old Emerson Laboratory, which laboratory was purchased by the New England Laboratories on the death of the late Dr. Herbert Clark Emerson in December, 1922, since which time it has been run as the Industrial Division of the larger laboratories.

Miss Minor was formerly connected with the Emerson Laboratory, but for the past six years has been in charge of the Paper Research Laboratory at the Collins Manufacturing Company, North Wilbraham, Mass. Prior to this Miss Minor was in charge of the Paper Mill Laboratory of the Hammersley Manufacturing Company at Garfield, N. J., and prior to that time was professor of Organic Chemistry at Goucher College, Baltimore, Md.

Miss Minor was graduated from Drury College in Missouri in 1904 with the science honors. In 1908-1910 she was a graduate fellow in Chemistry at the University of Pennsylvania. In 1914-1917 she was a graduate scholar at Bryn Mawr College and from there received the degree of Doctor of Philosophy in Chemistry.

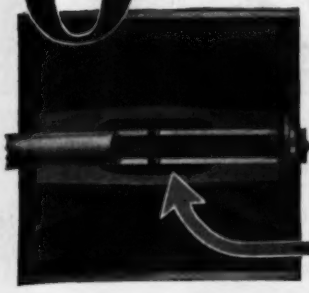
Cost and Technical Association Meet

[FROM OUR REGULAR CORRESPONDENT]

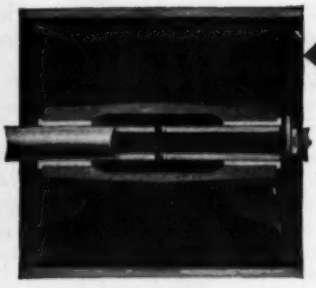
KALAMAZOO, Mich., March 19, 1928.—The Cost and Technical Association of the Paper Industry held its March meeting at 6:30 Thursday evening, March 22, at the Columbia hotel. Two talks followed the dinner. Arthur Fitzgerald, of the purchasing department of the Kalamazoo Vegetable Parchment Company, spoke on "Buying." Charles Barton, of the technical department of the Michigan Paper Company, talked on "Converting Old Papers."

6 Points of Refinement

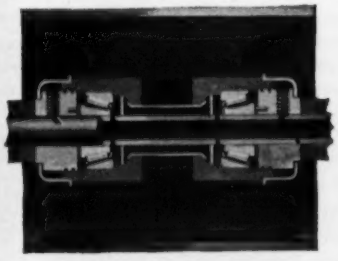
on All Jeffrey Smooth-Running Wear-Resisting Belt Pulleys



Plain Bearing



Bronze Bushed Bearing



Roller Bearing

1 Bearings are pressure lubricated. Grease under pressure from the inside flows all dirt outward.

2 Recessed grease pockets keep bearings from drying out between oilings. Open feed holes cannot clog up.

3 Pulleys are cast from grey iron with a smooth hard surface, providing a high degree of wear and rust resistance.

4 Open end construction keeps dirt from piling up on bearings. Strongly reinforced against breakage.

5 Only five-sixteenths inch clearance between pulleys. Belt cannot sag or cut itself on edge of pulley.

6 A type of bearing for every job; plain bearings, bronze bushed bearings, or roller bearings with a labyrinth grease seal.

15564-1

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Ventilation Fans

CONSTRUCTION NEWS

A Summary of Vital Facts Regarding Construction, Finances and Operation of Paper Mills

Construction News

South Bend, Wash.—The Willapa Pulp and Paper Mills, Inc., have completed plans for a proposed new pulp mill on local site, and will proceed with superstructure at an early date. General contract has been let to the Puget Sound Bridge & Dredging Company, Central Building, Seattle. Structure will be one-story, equipped for a capacity of about 60 tons per day, and is reported to cost close to $500,000.

Jefferson City, Mo.—The Missouri Paper Box Company is considering the early rebuilding of portion of plant destroyed by fire March 12, with loss reported at close to $25,000, including equipment. Reconstruction will approximate a like amount.

Buffalo, N. Y.—The duPont Cellophane Company, Inc., River Road, manufacturer of special processed glazed papers, has plans maturing for the construction of a large addition to its plant for considerable increase in present output. It will be one-story, reinforced-concrete, reported to cost about $225,000, with machinery. Plans will be drawn by the duPont Engineering Company, duPont Building, Wilmington, Del.

New York, N. Y.—Albert & Son, recently organized by D. M. Albert and A. Tamor, 132 West Twenty-first street, New York, with capital of 200 shares of stock, no par value, is said to be arranging the early operation of a local factory for the manufacture of corrugated boxes and cartons, etc.

Otsego, Mich.—The Mac Sim Bar Paper Company is reported arranging for a proposed general expansion program to cost more than $400,000, including the installation of considerable equipment for heavy increase in present output.

Beverly, N. J.—Robert F. Hobbs, Inc., manufacturer of wall papers, has begun the erection of a one-story addition at rear of present factory, to be 50 x 80 ft., designed primarily for storage and distributing service. A general contract for the work has been let to Joseph E. Kolster, South Beverly, N. J. Estimated cost not announced.

Springfield, Mass.—The United States Envelope Company is arranging for the early sale of additional common stock, to total $875,000, a portion of proceeds to be used for general financing and operations.

Marseilles, Ill.—The Certain-Teed Products Corporation, 100 East Forty-second street, New York, manufacturer of roofing and building papers, and affiliated products, will take bids early in April for the construction of a new one-story building at Marseilles, Ill., to be used primarily for storage and distributing service. It is reported to cost about $40,000, with equipment. Klipstein & Rathman, Security Trust Building, St. Louis, Mo., are architects.

San Francisco, Cal.—Plans are said to be maturing for a merger of the Zellerbach Corporation and the Crown Willamette Paper Company, 248 Battery street, San Francisco, with main mills at Lebanon and West Linn, Ore., to be followed by a general expansion and improvement program for increased output at various mills of the two organizations, including proposed new pulp and paper mill project, with hydroelectric power plant, of the Zellerbach organization in Alaska, which will involve more than $15,000,000.

Chattanooga, Tenn.—The Atlas Paper Box Company, 1303 Cemetery avenue, will proceed with superstructure of its proposed new plant unit at an early date. It will be one-story, reported to cost close to $25,000, with equipment.

Fresno, Cal.—The San Joaquin Regional Advisory Council, California Development Association, Charles S. Knight, Industrial Director, has investigation under way at Fresno and vicinity, with view to establishment of a local paper and board mill in this section, to utilize lumber wastes. The Sugar Pine Lumber Company has extensive mills in this district and will furnish estimates of waste for utilization as a byproduct for pulp production. It is proposed to prepare approximate cost of logical plant development and other details.

Laurel, Miss.—The Mason Fibre Company has work in progress on a new plant unit on South Fourth avenue, 100 x 400 feet, for the production of fiber-board products, and it is understood that structure will be ready for instalaltion of equipment at an early date. Contracts for certain plant requirements have been let. Work is expected to cost more than $80,000.

Perkinson, Miss.—The L. N. Dantzler Lumber Company, Moss Point, Miss., is reported at the head of a project to construct and operate a pulp and paper mill in this vicinity. Officials of the Dantzler company including A. F. Dantzler, formerly identified with the Southern Paper Company, Moss Point, are understood to have disposed of their interest in the latter organization. The mill project at Perkinson is reported to cost close to $4,000,000, including pulp and paper-making divisions, power house, machine shop and other structures. A company, it is said, will be formed by the Dantzler interests to carry out the enterprise. Forestry bills now pending in Congress are understood to have a bearing on proposed plant site and development.

Neenah, Wis.—The Bergstrom Paper Company, West Wisconsin avenue, Neenah, has plans maturing for the construction of a new steam-operated power plant for service at its mill, consisting of a one-story boiler house, 50 x 108 feet, and one-story turbine room 50 x 50 feet, estimated to cost close to $80,000, with equipment. Installation will include a 2,500 kw. generating unit and three boilers with accessories. Orbison & Orbison, 110 West College avenue, Appleton, Wis., are consulting engineers in charge.

Miami, Fla.—Walter J. Floyd, 702 First avenue, Miami, is at the head of a project to construct and operate a local plant for the production of paper pulp, using palmetto roots as raw material. It is understood that a company will be formed to carry out the development; raw material properties have been selected. The proposed mill will be equipped to handle more than 50 tons of palmetto roots per day.

Montreal, Que.—I. W. Killam, president, Royal Securities Corporation, St. James street, Montreal, and owner of the *Toronto Mail and Empire*, Toronto, Ont., is at the head of a project to construct and operate a news print mill in Nova Scotia, where site has been selected in the vicinity of Liverpool, Queen's County. The initial plant will consist of a group of units with machinery for an output of about 400 tons of finished news print per day, and will give employment to close to 1,000 men. A large

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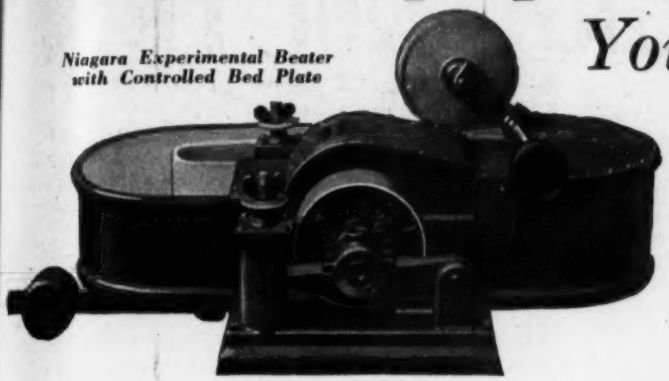

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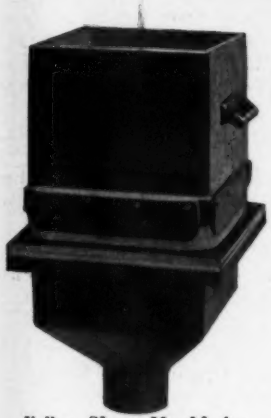

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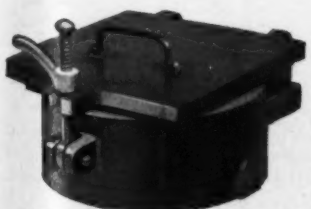
Valley Laboratory Equipment was developed by practical and technical men through six years of work in our cooperative mill laboratories. When you install this equipment you get *original* testing apparatus. Valley Laboratory Equipment is today the recognized laboratory equipment throughout the country—now used in 85 mills.

Valley Hot Plate for Drying Test Sheets

Our special booklet on Laboratory Equipment will be of interest to you. A copy will be sent upon request. Write for it today.



Valley Hydraulic Parts for Removing Water from Sheets

VALLEY IRON WORKS CO.

Machinery for Paper and Pulp Mills

APPLETON WISCONSIN

New York Office: 350 Madison Avenue
Western Manufacturing & Sales Division,
Smith & Valley Iron Works Co., Portland, Oregon.

tract of raw material lands has been acquired. The entire project is reported to cost close to $10,000,000. It is said that a new company will be formed, headed by Mr. Killam, to carry out the enterprise.

Brooklyn, N. Y.—Firneno Brothers, Inc., 573-85 Sackett street, dealer in waste paper stocks, has filed plans for the construction of a new three-story brick building, to be used for storage service, estimated to cost about $22,000. General contract has been let to J. D'Amato, 273 East Seventh street. Plans were drawn by Salvati & Le Quernik, 369 Fulton street, architects.

Chicago, Ill.—Tallman Robbins & Co., 314 West Superior street, Manufacturer of loose leaf paper products and similar paper goods, has leased additional space in building noted for a term of years and will occupy for expansion in production.

Monroe, Mich.—The Consolidated Paper Company has superstructure in progress on a new addition to its plant to be equipped primarily for the production of folding boxes. It will be four-story, reported to cost close to $300,000, with machinery.

Belleville, N. J.—The Eastwood Manufacturing Company, manufacturer of brass, wire, screens for paper mill service and other screen cloth products, has been acquired by new interests headed by George E. Edmunds, Detroit, Mich., and Col. E. C. Carrington, New York. The new owners will take immediate possession and will be active in the management. Mr. Edmunds will be president, and Col. Carrington, vice-president; C. H. Neally, heretofore an official of the company will continue as chairman of the board. It is reported that a general expansion program will be carried out; a sum in excess of $1,500,000 was given for the property.

New Companies, Etc.

Boston, Mass.—The Cooperative Paper and Box Company, 658 Washington street, has been organized, to manufacture and deal in paper boxes and containers. David Berry heads the company.

Brooklyn, N. Y.—The Embossed Show Card Company, has been incorporated with capital of $10,000, to manufacture and deal in paper card stocks and kindred paper products. A. H. Kesselman, 215 Montague street, Brooklyn, is representative.

Brooklyn, N. Y.—The Arrow Paper Company, Inc., 754 Grand street, has filed notice of company dissolution, under state laws.

Grand Rapids, Mich.—The Sanitary Tissue Products Corporation has been incorporated under Delaware laws, with capital of $150,000, and 6,000 shares of stock, no par value, to manufacture and deal in tissue and other papers. The company is represented by the Colonial Charter Company, Citizens Bank Building, Wilmington, Del.

Indianapolis, Ind.—The Commercial Wall Paper Mill, Inc., has filed notice of organization in Indiana to operate with capital of $150,000, to manufacture and deal in wall papers. Company will be represented by Jacob S. White, Merchants Bank Building, Indianapolis. Headquarters of the company are at 1416 South Talman avenue, Chicago, Ill.

Chicago, Ill.—The Paper Mache Products Company, Chicago, has filed notice of company dissolution under state laws.

Brooklyn, N. Y.—Kostitsky & Oderman, Inc., has been incorporated with capital of $30,000, to manufacture and deal in paper products. The incorporators are Isaac Oderman, 372 Fifth avenue, Brooklyn; and Jacob Saul Barshay, 2 Lafayette street, New York; last noted is representative.

Buckrun, Pa.—The Federal Court has appointed a receiver for the Equity Paper Mills, Inc., of this place. The company is said to have assets of $581,037, and liabilities of $249,224, the receivership occurring through lack of working capital.

Chicago, Ill.—The W. J. Bradford Paper Company, 3742 South Ashland street, has arranged for an increase in capital to $16,000, and 60 shares of stock no par value.

Chicago, Ill.—The United States Cardboard and Paper Company has filed notice of company dissolution under state laws.

Better Demand in Indianapolis

[FROM OUR REGULAR CORRESPONDENT]

INDIANAPOLIS, Ind., March 19, 1928.—The local trade is in a little more hopeful mood than at the same time last year. The situation is not as bright yet as it might be, but there are indications of a slight revival in business.

The demand in the fine paper line shows perhaps the most activity. Printers are a little more active and inquiries are more numerous, showing that there is some work in prospect. The printers are very cautious in their buying and in this they have nothing on the paper jobber. All seem inclined to keep their stocks to as low a point as is consistent with safety and yet be able to supply all the immediate demand.

So far as can be learned, there is as yet no shortage of any nature in the local field. The jobbers apparently have sufficient supplies, even if their stocks are not heavy. However, they are keeping their weather eye opened against the first signs of re-awakening business.

In spite of rather poor demand for wrapping papers and sulphite manilas, prices have been increased at the mills to a small degree. All other lines are being held at fairly steady levels.

Some slight improvement is expected in the demand for roofing and building papers during the next three or four weeks. Weather conditions during the most of March have not been conducive to the opening of the spring building season and the situation has not improved much as yet from the midwinter volume. Dealers in building papers point to the fact that contractors are making a mistake in not at least filling a large percentage of their probable requirements for spring at the present time, for prices are advantageous and are as low as they likely will be all year.

Rates on News Print

Wisconsin Paper and Pulp Manufacturers Association has filed a brief in the fight now being waged before the Interstate Commerce Commission by the Northern New York paper manufacturers for lower rates on news print and wrapping paper. The Wisconsin mills fear that the reductions sought in the east will mean a new rate structure for the middle west. In their contentions, the Wisconsin mills say:

"Rates on news print from Wisconsin to central territory are definitely related to the rates from Northern New York and have been for 26 years. To permit Wisconsin rates to be advanced would disturb this relationship on what little business we now have and are struggling to keep. Based on complainants' assurance that they do not seek higher rates from our mills, we are not called upon to defend our adjustment and there is no legal basis for molesting our rates." At the same time the Wisconsin producers object "to the extremely large reductions" sought by the New York companies, particularly to Chicago, St. Louis and points in prorating territory.

"These reductions, if granted," reads the statement, "would also have a far reaching effect upon rates west of those gateways. Likewise it would make more keen competition than is already affecting our mills.

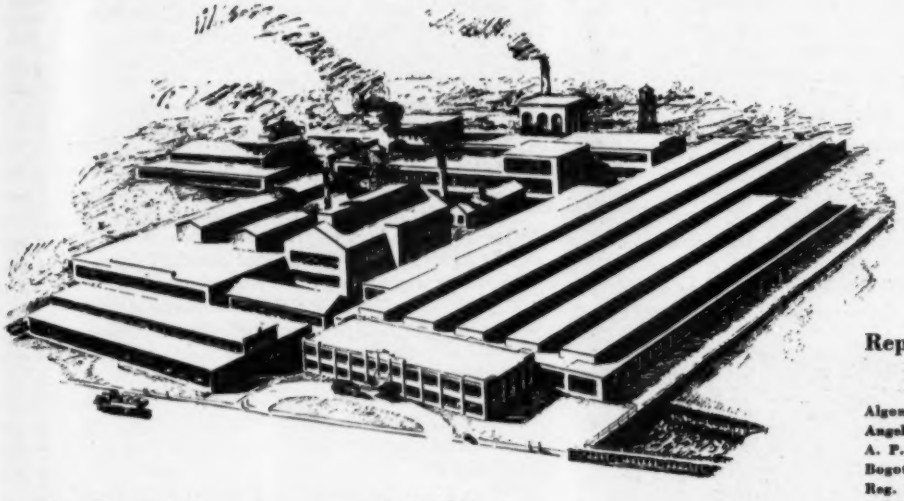
"Chicago, St. Louis, the Mississippi river cities and points beyond, constitute our only natural market and we at least want a fighting chance to hold our own in this territory, to which we are closely located and should naturally serve."

Fort Edward Waste Products Co. Formed

The Fort Edward Waste Products Company, Inc., Fort Edward, is the name of a new concern chartered this week by the Secretary of State at Albany to deal in waste paper. The firm is capitalized at $25,000 and directors are William H. Hill and Almon P. Hill, of Fort Edward, and Joseph Yanklowits, of Glens Falls. Incorporation papers were filed by Wyman S. Bascom, of Fort Edward.

It is the plan of the new company to handle waste paper in carload lots and later on if the business warrants it a large plant will be erected here to be used for sorting and packing.

Your New Paper Mill—



Speed, Economy and Efficiency are assured when Austin Builds

Experience. **Austin has built many large efficient Paper Mills from Coast to Coast, besides other large industrial projects by the score.**

Co-operation. **Austin will co-operate fully with your own Engineers on designs, plans, etc., for your new Mill.**

Modern Features; Speedy Construction. **Austin will build your modern, daylighted Mill in the shortest possible time.**

Maximum Return per Dollar Invested. **You are assured the full benefit of more than a half-century of building experience, when Austin does the work.**

It will mean much to you, if your project is a large one, to know that your Builder is equipped and qualified in vision, experience and facilities, to co-operate with you—as Austin is.

It will mean just as much if you are planning a smaller unit—for there you will find Austin Building Service equally valuable, and rendered with the same thoroughness and interest.

Find now how Austin can help you. Preliminary plans, costs, etc., will be furnished promptly. We cordially invite you to 'phone, wire or write the nearest Austin Office.

Representative Austin Clients In the Paper Industry

Algonquin Paper Corp., Ogdensburgh, N. Y.
Angelus Paper Box Co., Los Angeles, Cal.
A. P. W. Paper Co., Albany, N. Y.
Bogota Paper & Board Co., Bogota, N. J.
Reg. N. Boxer Co., Toronto, Ont.
California-Oregon Paper Mills, Los Angeles, Cal.
Chase Bag Company at Buffalo, N. Y. Toledo, Ohio and Goshen, Ind.
Chillicothe Paper Co., Chillicothe, O.
Cleveland-Akron Bag Co., Boston Mills, Ohio
Columbia River Paper Mill Co., Portland, Ore.
Continental Paper Co., Bogota, N. J.
Federal Paper Board Co., Bogota, N. J.
Foster Box Board Co., Utica, N. Y.
Robert Gair Co., Piermont, N. Y.
Hammermill Paper Co., Erie, Pa.
Hinde & Dauche Paper Co., Sandusky, Ohio
Holyoke Gummed Products Co., Holyoke, Mass.
Hygrade Corrugated Paper Products Co., Long Island City, N. Y.
Ideal Corrugated Box Co., Parkersburg, W. Va.
Inland Empire Paper Co., Millwood, Wash.
The Jaite Company, Jaite, Ohio
Log Supply Co., Berthierville, Que.
Morgan Wall Paper Co., Gouverneur, N. Y.
Oswegatchie Paper Co., Gouverneur, N. Y.
Peninsular Paper Co., Ypsilanti, Mich.
Royal & Company, Bryn Mawr, Pa.
The Simplex Paper Corp., Palmyra, Mich.
Southern Waxed Paper Co., Atlanta, Ga.
Standard Wall Paper Co. at Joliet, Ill., and Hudson Falls, N. Y.
Spaulding Pulp & Paper Co., Newburg, Ore.
H. F. Watson Co., Chicago, Ill.
West-Carrollton Parchment Co., Dayton, O.
Western Wax Paper Co., Los Angeles, Cal.
The White Tar Co. of N. J., Kearny, N. J.

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Complete Building Service

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Paper Association Honors Frank E. Floyd

Frank E. Floyd, recently elected executive secretary of the National Paper Trade Association, was the guest of honor at a dinner tendered to him by the Paper Association of New York City on Tuesday at the Arkwright Club, 320 Broadway.

J. C. Mallalieu an Efficient Toastmaster

J. C. Mallalieu, former president of the National Paper Trade Association, was the toastmaster, and seated with him at the speakers table beside the guest of honor were A. D. Coffin, C. A. Crocker, A. H. Chamberlain, B. A. Franklin, W. H. Holden, Frank McAllister, J. B. McDaniel, M. O'Brien, O. M. Porter, W. J. Raybold, Irwin Slote and S. L. Willson.

Following an excellent repast during which an efficient orchestra discoursed many popular airs, the toastmaster read several con-

FRANK E. FLOYD, EXECUTIVE SECRETARY, NATIONAL PAPER TRADE ASSOCIATION

gratulatory telegrams from leading members of the industry who were prevented from attending the event for various reasons.

Toastmaster Mallalieu introduced the guest of honor as a man whom he was proud to call "Friend" and stated that Mr. Floyd's long training as a paper merchant eminently fitted him to adorn the post of executive secretary of the National Paper Trade Association. Mr. Mallalieu stressed the new executive secretary's great qualities of leadership and declared that he possessed executive capacity of a high order.

Frank E. Floyd Enthusiastically Received

On rising to reply, Mr. Floyd was received by the gathering with the utmost enthusiasm. He spoke very feelingly of the expressions of friendship and offers of co-operation he had received from members of the industry since accepting the appointment. He pledged himself to perform the duties pertaining to the position to the best of his ability, to always endeavor to do the bidding of the members, to carry out their thoughts, and to place the National Paper Trade Association before the paper manufacturers and the public in the most favorable light.

S. L. Willson Makes Interesting Address

Sidney L. Willson, president of the American Writing Paper Company, gave a comprehensive review of the paper industry, including its development, and discussed manufacturing and distribution problems in a helpful manner which was greatly appreciated by those present. He pointed out the importance of economies and the reductions of costs and gave his views of the trend of direct selling. Mr. Willson declared that the present unsettled conditions called for leadership and congratulated the National Paper Trade Association on securing the services of Mr. Floyd to guide the organization.

Interesting and instructive addresses were also given by Clifton A. Crocker, president of the Chemical Paper Manufacturing Company; Walter J. Raybold, vice-president and treasurer of the B. D. Rising Paper Company; B. A. Franklin, vice-president of the Strathmore Paper Company; M. O'Brien, of Holyoke, Mass., and J. S. McDaniel, secretary of the Cordage Institute, all of whom paid tribute to Mr. Floyd's worth as an executive and friend.

Paper Association Elects Officers

Preceding the dinner, the annual meeting of the Paper Association of New York City was held, there being an excellent attendance of members present. The following officers were elected for the ensuing term: President, W. H. Holden, George W. Millar & Co.; Vice-President in charge of Fine Paper Division, Alan C. Damon, Paul E. Vernon & Co.; Vice-President in charge of Wrapping Paper Division, R. L. Walton, D. S. Walton & Co.; Treasurer, H. B. Thurston, Conrow Brothers; Secretary, Irwin Slote, 41 Park Row, New York. Directors: George McKinney, F. A. Flinn, Inc.; Clarence Biddulph, R. C. Lesh Company; Carl A. Newfang, Canfield Paper Company; Richard Kettles, Charles F. Hubbs & Co.; James Levens, George W. Millar & Co., and William E. Ebbets, Coy, Disbrow & Co.

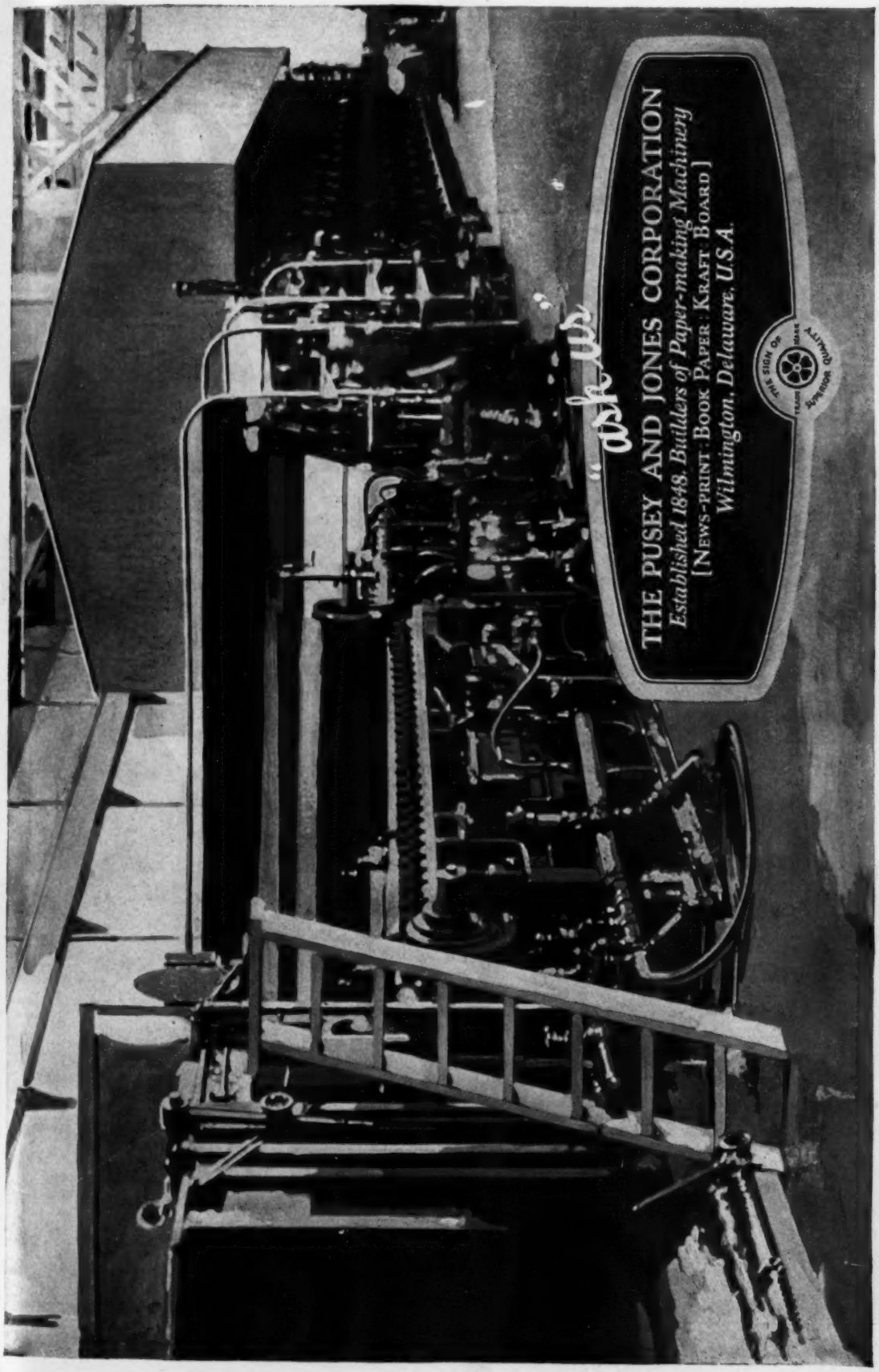
No Change in Fort William Plant

There will be no change in the operating organization of the plant of the Fort William Paper Company, Ltd., recently involved in a gigantic pulp and paper and power merger with eight other of the largest plants in Canada, L. R. Wilson, vice-president and managing director of the Abitibi Power and Paper Company, Ltd., announced this week during a visit to the Fort William mill. Accompanying vice-president Wilson on his first official trip of inspection to the merged mills of the company was W. H. Smith, secretary-treasurer of the Abitibi Power and Paper Company. From Fort William they left for Pine Falls, Man., where they visited the plant of the Manitoba Paper Company, Ltd., the farthest west of a string of plants established throughout Quebec, Ontario and Manitoba. In making his announcement in connection with the Fort William plant, Mr. Wilson declared that the taking in of the local plant into the big merger would necessitate a change in the name to that of the Abitibi Power and Paper Company, Ltd.

Jake Kuss Goes With Michigan Paper Co.

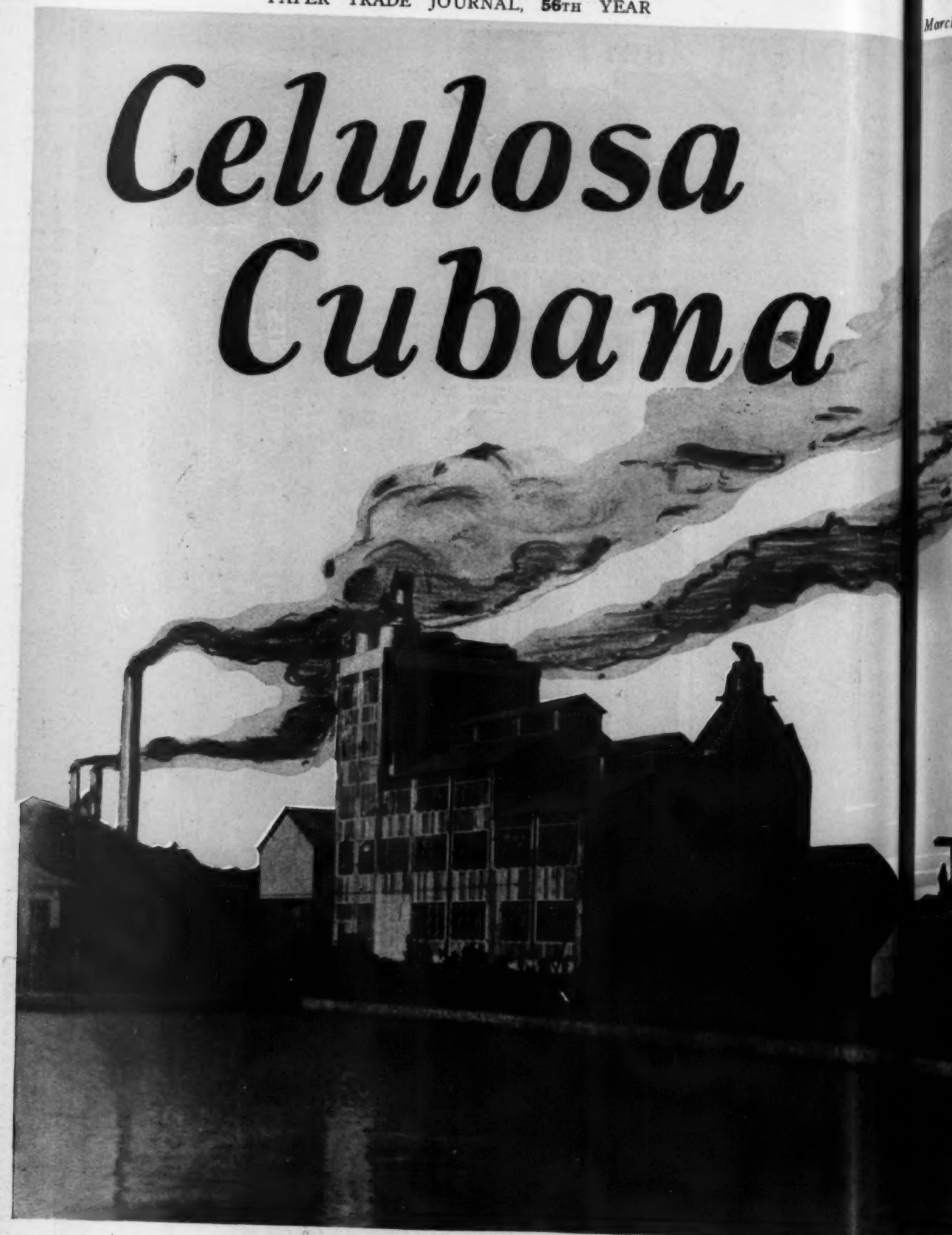
PLAINWELL, Mich., March 19, 1927.—Jake Kuss has joined the Michigan Paper Company staff taking charge of the production in the Coating Division. This change was effective March 1.

Mr. Kuss was for several years general superintendent of the coating plant at the Allied Mills, and came to the Michigan Paper Company from Watervliet, Mich.


THE PUSEY AND JONES CORPORATION
Established 1848. Builders of Paper-making Machinery
[News-print · Book Paper · Kraft Board]
Wilmington, Delaware, U.S.A.
THE SIGN OF QUALITY

Illustrating one of the two 168-inch Bond Paper Machines, designed and built in 1926 by The Pusey and Jones Corporation for Fraser Paper, Limited, Madawaska, Maine

Entire contents of this advertisement copyrighted 1927 by The Pusey and Jones Corporation, Wilmington, Delaware, U. S. A.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A New Raw Material that will lower your stock costs
A product of the Research Laboratory
A High Alpha Cellulose Pulp
A perpetual Pulp Supply

for **Absorbent Specialties**
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Power Plant Section

Reducing Power Costs Through Unit Treatment

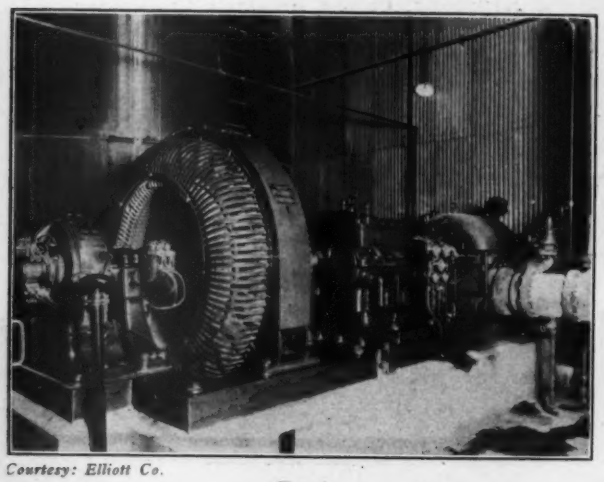
Conducted by REGINALD TRAUTSCHOLD, Consulting Engineer

Modernized Mills and Power Plants

Some Steam Turbine Applications

The most important unit of the power plant is the prime mover. Everything revolves about it. All other power plant equipment is more or less subservient. In a sense, it is the center around which the power plant is constructed, constituting the actuating force of the mill. Consequently, discussions of prime movers, or similar equipment employed as main power units, and adaptations of such units to auxiliary drive services are of particular interest to the pulp and paper industry.

Today, and probably to an even greater extent in the future, the outstanding prime mover and an important main power unit, used also to considerable extent as a power drive for auxiliaries, is the steam turbine. In the September 29th, 1927, issue, these columns were given over to a general discussion of this important class of equipment, the object of which was to give some indication of the economy of steam turbines in paper mill service. Statistical records from a few typical installations were presented to show the class of savings which can be realized and returns which investments in modern steam turbine installations can bring. The yearly yield on investment varied from 14.1 per cent to 252.3 per cent, a pretty wide range, but nevertheless truly typical. As a prominent manufacturer of steam turbines recently remarked, "steam turbines are more or less tailor-made jobs, and, therefore, what applies to one would not apply to another." For this reason, the present discussion will deal more with steam turbine practice in the industry than with cost statistics emanating from their use, bringing in monetary considerations only incidentally and by inference.



Courtesy: Elliott Co.

FIG. 1

500-Kilowatt Non-Condensing Geared Turbo-Generator set. Tonawanda Paper Co.

For main power generation, then, all varieties of turbo-generator units, the transmission of power in the modern mill being today almost exclusively in the form of electric energy, are being employed with outstanding efficiency and economy, those of the condensing, non-condensing, bleeder and mixed pressure turbine types, and various combinations of these general varieties. These will be touched upon briefly and in such order, in this way focusing attention, not on one variety, but upon the fact that each variety is essentially suitable for paper mill service under certain conditions and that the best turbine installation is indeed a "tailor-made job." Interposed, also, will be references to various straight turbine drive applications.

Courtesy: Terry Steam Turbine Co.

FIG. 2

Five Compact Non-Condensing Turbine Paper Machine Drives.

Condensing Turbine Applications

Placing the consideration of the condensing turbine in main power generation first is rather fortunate, however, as it is probable that the idea of operating a condensing unit in such service may be foreign to many mill managers, the necessity for an adequate supply of low pressure steam being so outstandingly essential in paper making. In view of this situation, furthermore, the best way of presenting a few points on condensing turbine applications is probably to draw upon some notes referring to a successful installation of this character and covering some of the recommendations made by the engineers who were responsible for the undertaking.

The condensing unit, incidentally, was installed in the power

~Dollars Saved on Steam Costs~

Just as Important as dollars Saved in any other way~

Mills check the B. T. U. in the coal they buy and fight for the last red cent on the price they pay. That's good business.

But why stop there? Why put up with a drying condition on your paper machine that you know to be faulty, and waste that "well-bought" coal on excessive steam costs?

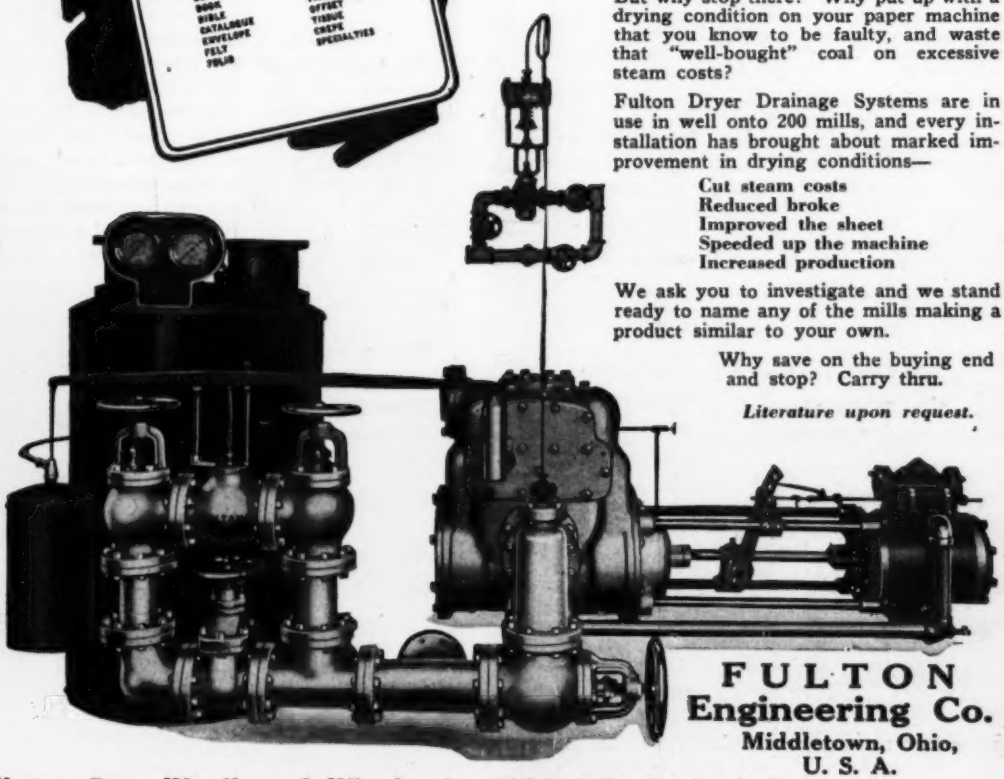
Fulton Dryer Drainage Systems are in use in well onto 200 mills, and every installation has brought about marked improvement in drying conditions—

Cut steam costs
Reduced broke
Improved the sheet
Speeded up the machine
Increased production

We ask you to investigate and we stand ready to name any of the mills making a product similar to your own.

Why save on the buying end and stop? Carry thru.

Literature upon request.

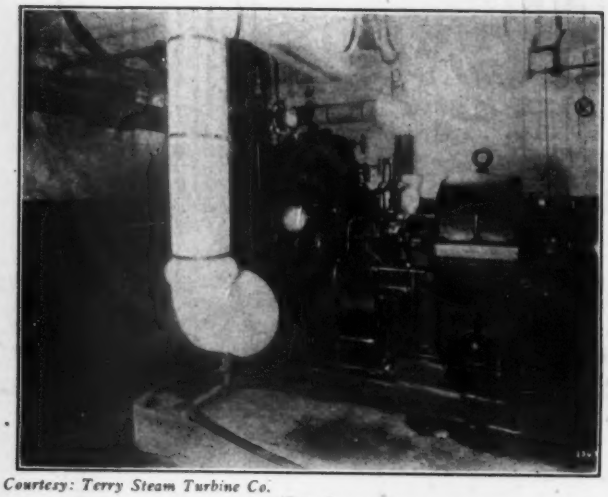


FULTON Engineering Co.
Middletown, Ohio, U. S. A.

Western Rep.: Woodbury & Wheeler Co., 155 2nd St., Portland, Ore

Fulton

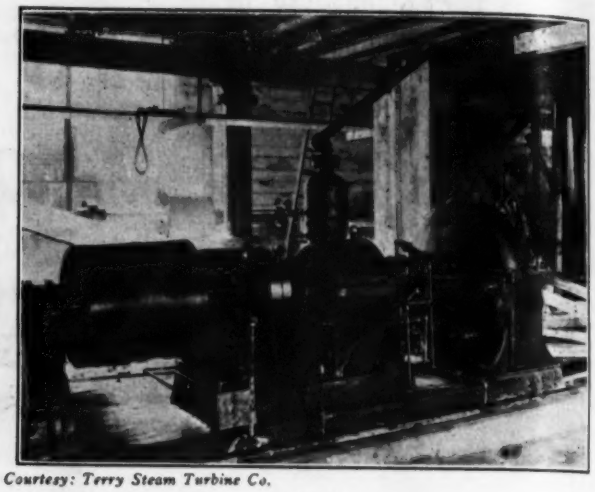
Dryer Drainage Systems



Courtesy: Terry Steam Turbine Co.

FIG. 4

Non-Condensing Steam Turbine Displaces Reciprocating Engine. Fletcher Paper Co.

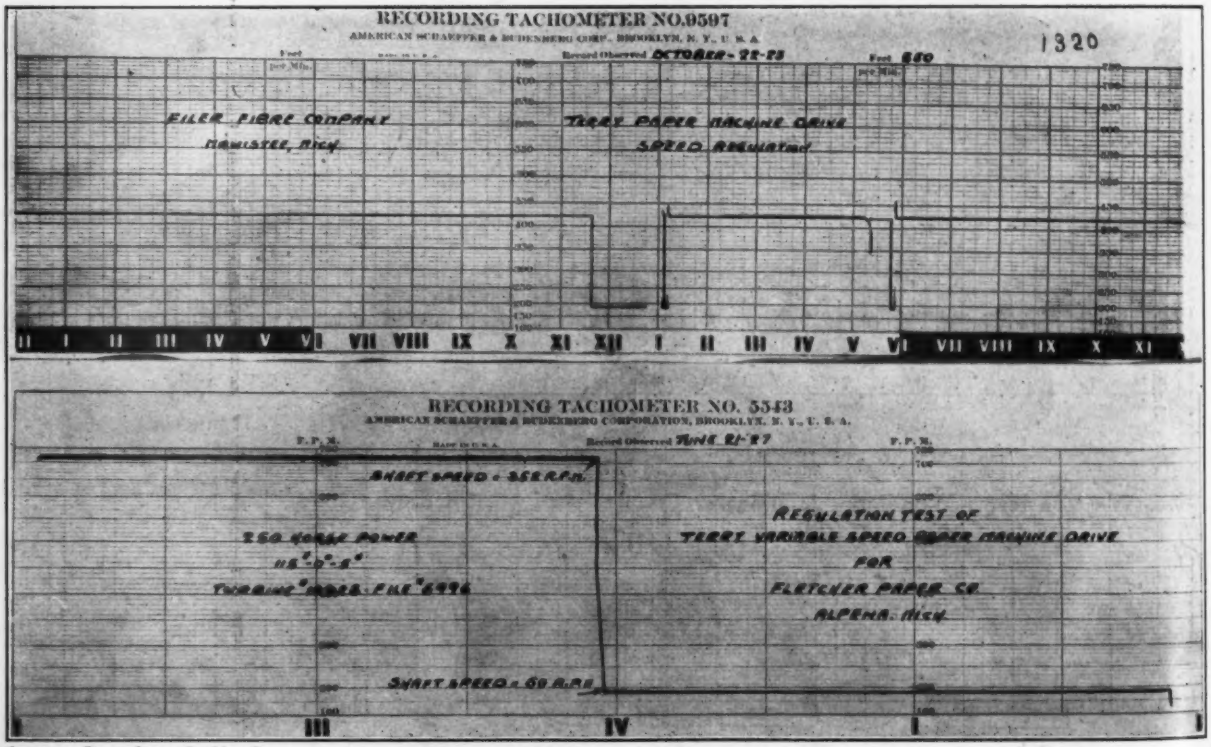


Courtesy: Terry Steam Turbine Co.

FIG. 5

200 Horsepower Non-Condensing Turbines Drive Constant Speed and Variable Speed Shafts at the Tumwater Paper Mills.

plant of an active and going mill, so it had to fit in efficiently with existing non-condensing equipment and made to conform with quite satisfactory operation of proven worth. Some changes in practices and mill layout had to be made, naturally, and these will be mentioned, for they exerted considerable weight in determining the type of turbine installed. For instance, the two existing beater engines, previously employed with individual exhausts, were made to discharge to a common low pressure steam header, as were also two alternator units in service. This arrangement is more flexible in providing a process steam supply and reservoir than is each non-condensing unit with its own exhaust. To supplement the low pressure steam supply from the non-condensing units, which is necessary only during the winter months, an extraction line is run from one of the lower stages of the condensing turbine to the low pressure steam header. As an additional insurance of there being an adequate process steam supply under all conditions, as when the condensing turbine carries such a low load that steam extracted from one of the final stages might be below the pressure required for process work, a second extraction line, from one of the higher stages, is provided



Courtesy: Terry Steam Turbine Co.

FIG. 3

Typical Speed Charts of Turbine Paper Machine Drives.

PERKINS HOLYOKE

Web Super-Calenders

"No Calender can be better than the rolls in it."

Photo Shows — Perkins Nine Roll Web Super Calender with Direct Connected Single Motor Drive Employing Dual Frequency Control

AN IMPORTANT FACTOR in the development of Perkins Web Super-Calenders has been the close association of the Perkins organization with the paper makers of America for more than half a century. This experience has produced machinery for finishing paper in the *most satisfactory way it can be done.*

Perkins machines give you that ruggedness necessary for modern operating speeds and conditions. Long service is built into them. Engineering and construction have been accomplished for high efficiency in production, ease of operation, low power consumption and minimum upkeep.

Paper makers have long since realized that no Calender can be better than the Rolls in it. Perkins Rolls are so well established through the years of successful service that these machines are given the most substantial recognition of the industry at large.

B. F. Perkins & Son, Inc., Holyoke, Mass.

TRADE MARK REG. U.S. PAT. OFF.

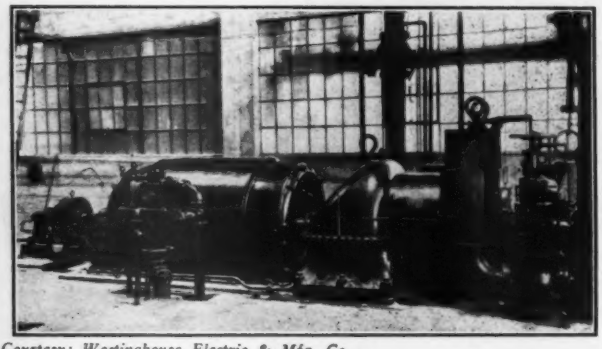
COTTON ROLLS - PAPER ROLLS - EMBOSSING ROLLS - CHILLED IRON ROLLS - GRANITE PRESS ROLLS - WEB SUPERCALENDERS - GLASSINE SUPERCALENDERS - FRICTION CALENDERS EMBOSSING CALENDERS - SHEET CALENDERS - PLATERS - MULLEN PAPER TESTERS TENSILE TESTERS - VENTILATING FANS - RAG CUTTERS - STOCK CUTTERS - PAPER DAMPENERS BLEACH EJECTORS

which can also be discharged to the low pressure header, should the necessity arise.

The condensing turbine is provided with two condensers and two circulating pumps for carrying water up from the river through the condensers and up to a storage tank or heater, the hot discharge water serving as a supply for the beaters. Such briefly, is the general layout of the installation, the operation of the plant entailing summer and winter programs into which the condensing prime mover has been fitted in efficiently and functions with the balance of non-condensing equipment in a highly effective and economical manner.

During the summer months, when there is no heating load and the low pressure steam requirements of the mill are minimum, there is an excess of steam from the non-condensing units and the condensing turbine carries a high vacuum, 26-inch or better, with correspondingly high efficiency and low steam consumption. To maintain such vacuum, both of the circulating pumps have to be employed, the water leaving the condenser at a temperature of about 115 degrees. The excess exhaust steam from the non-condensing units suffices then, to elevate the temperature of this condenser discharge to that desired for the beater water, without the necessity of drawing on any live steam stimulation for the purpose.

During the winter months, while the heating load is on and

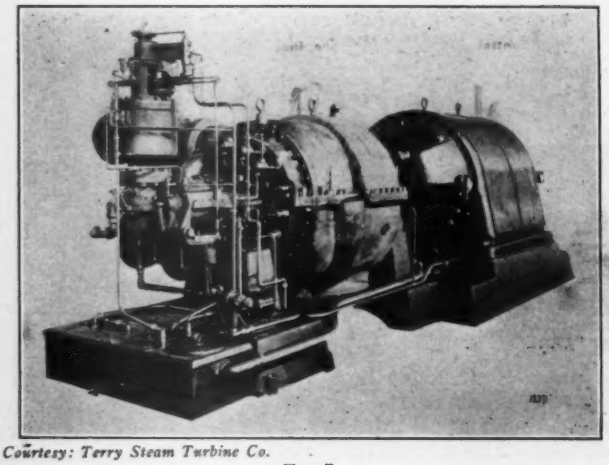


Courtesy: Westinghouse Electric & Mfg. Co.

FIG. 9

3,000-Kilowatt Steam Turbine Generating Unit. Washington Pulp & Paper Co.

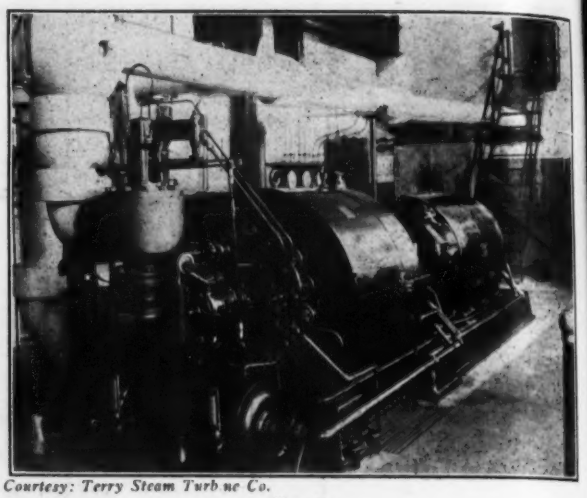
there is a maximum demand for low pressure steam, there is no exhaust steam available for bringing the temperature of the beater water supply to the required point. The necessary heat has to be obtained from the condensing turbine and is secured in a somewhat novel way. Instead of employing both circulating



Courtesy: Terry Steam Turbine Co.

FIG. 7

1,000-Kilowatt Bleeder Turbo-Generator—Second Installation at C. H. Dexter & Sons, Inc.



Courtesy: Terry Steam Turbine Co.

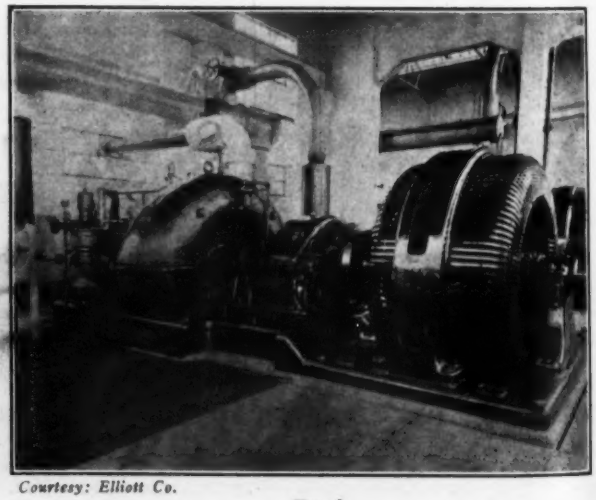
FIG. 6

500-Kilowatt Bleeder Turbo-Generator—Initial Installation at C. H. Dexter & Sons, Inc.

pumps, only one is used, with the result that, instead of the circulating water leaving the condensers at about 115 degrees, which permits the holding of a vacuum of 26 inches or better, the water leaves at a temperature of 150 degrees, the vacuum dropping to about 20 inches. This hot water discharge goes to the storage tank at about the correct temperature for efficient beater water supply and is used for this purpose. Means for the sensitive regulation of beater water temperature are provided, however, by the installation of a steam jet evactor. The steam pressure to the nozzles of the extraction lines can also be varied by hand, increasing or decreasing the vacuum in the condenser. This brings about a change in the circulating water temperature, as well as in the pressure of the extracted steam supply to the low pressure steam header, so providing, not only extremely sensitive regulation, but a highly effective heat balance.

Dependence Upon Non-Condensing Turbines

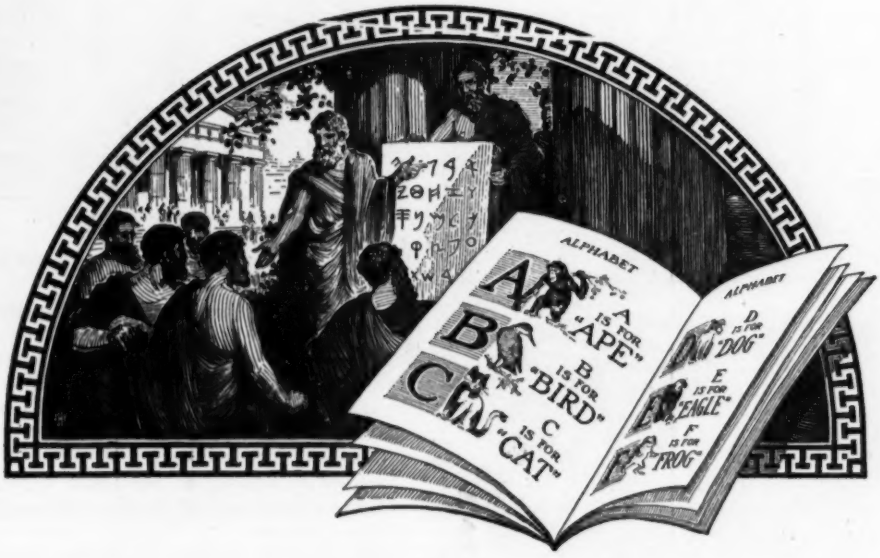
For an electrical drive, where the prime mover, or main power unit, has to furnish power for the paper machine only, the non-condensing turbo-generator set is the advisable selection, however,



Courtesy: Elliott Co.

FIG. 8

1,250-Kilowatt Mixed Pressure Turbo-Generator. West Virginia Pulp & Paper Co.



The A-B-C of Written History

EVERY child goes through the alphabet age. So did the human race in its childhood. Herodotus wrote of "Cadmus the Trojan" who is credited with having introduced the Phoenician alphabet among the Greeks. The latter, having learned to make symbols represent sounds, would write their first line from right to left after the fashion of their Semitic teachers. Then the second line would run from left to right, and so the inscription would wind back and forth. Soon, however, Greek writing settled down to a left to right order.

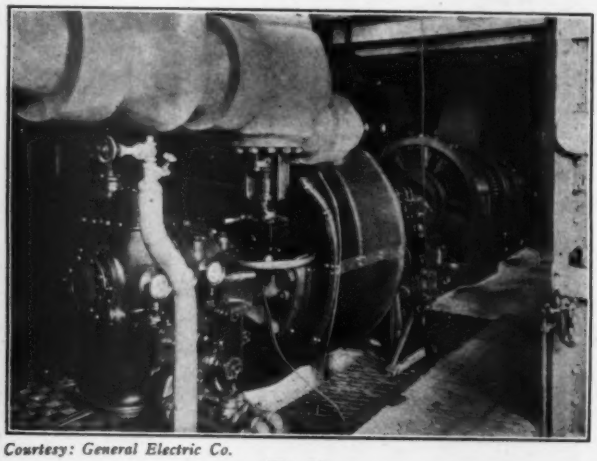
The Greek characters were changed by the Romans, whose ideas of letter formation we have modified very little even to this day.

Cadmus, whether a real person or merely a name to represent Phoenician culture, deserves our thanks. For with the successor to his alphabet the thoughts and experiences of today go into more than one hundred languages—on millions of sheets of paper—and tomorrow spread their benefits before a new generation.

HAMMERMILL PAPER CO.
ERIE, PA.

designed to give exhaust steam just below the amount required for drying, the balance of the necessary steam being made up of live steam reduced to the dryer pressure. Also, for the operation of turbine driven paper machines, the straight non-condensing turbine is probably best. This type of power unit will operate economically against back pressures up to 130 pounds gauge, so furnishing exhaust at adequate pressure for all process work. For instance, in plants which generate steam at 250 pounds and require quantities of steam at 100 pounds for process operations, it is entirely feasible and frequently economical practice to develop the power supply from the range of 150 pound pressure drop.

A good example of a non-condensing geared turbo-generator set installation is that at the Tonawanda Paper Company, North Tonawanda, N. Y. It is a 500-kilowatt unit operating on 200 pound gauge initial pressure, carrying 100 degrees of superheat, and exhausting against 20-pound back pressure. The exhaust is used for drying and general process work about the mill. The



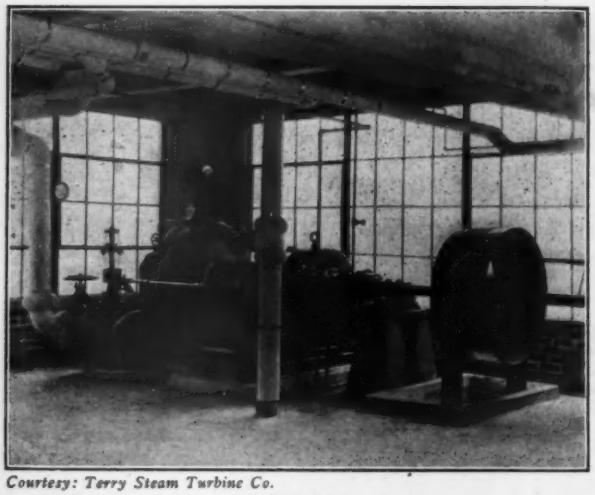
Courtesy: General Electric Co.

FIG. 10

Turbine Generating Set With D.C. and A.C. Generators and Exciter for Sectional Paper Machine Drive. Great Northern Paper Co.

generator characteristics are 3-phase, 25 cycle, 600 volt output at a speed of 750 r.p.m. The turbine speed is 3,600 r.p.m. and the speed reduction from turbine to generator is effected through the agency of a herringbone type of speed reducer.

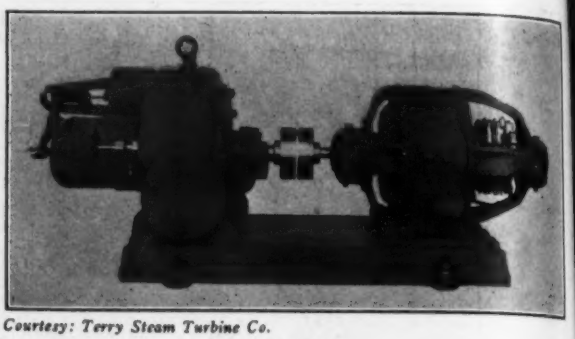
The non-condensing turbines may also be used to advantage for driving either the variable speed or the constant speed shaft, sepa-



Courtesy: Terry Steam Turbine Co.

FIG. 11

Turbine Direct Connected to Drive Shaft. Albemarle Paper Mfg. Co.



Courtesy: Terry Steam Turbine Co.

FIG. 13

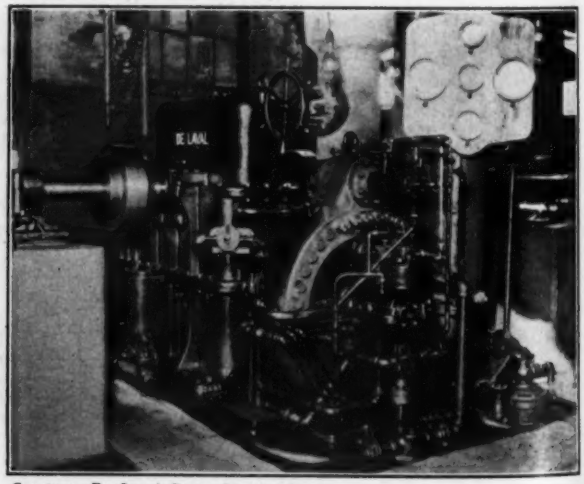
Typical Steam Turbine Exciter Set.

rately or combined, and constitute highly efficient and very compact units. Their compactness is brought out quite clearly in the line of five such units (Fig. 2) shown awaiting shipment at the plant of the manufacturer. These units, starting with the one to the extreme left, are of 250, 360, 250, 101 and 100 horsepower capacity, respectively, units 1, 2 and 4 being for variable speed operation and the other two for constant speed service.

With these turbines, the paper machine may be driven at considerably higher speeds than when engine driven, materially increasing production, and the speed regulation is so precise that breakages caused by irregular driving torque are reduced to a minimum. In this connection, the typical speed charts illustrated are of interest. One was taken on a drive installed in a mill of the Filer Fibre Company, Manistee, Mich., a 450-horsepower machine, and the other on a regulation test at the Fletcher Paper Company, Alpena, Mich., where the turbine, a 250-horsepower unit, is equipped with a variable speed governor with a 6 to 1 speed range.

At the latter mill, the turbine operates on 115-pound initial steam pressure and exhausts against 5-pound back pressure. The simplicity and compactness of the unit, incidentally, enabled the Fletcher people to reduce their operating force by three men and to secure considerably greater production, by being able to drive the machine at higher speed than with the supplanted drive. That the installation paid is further evidenced by the fact that after a six months try-out of this initial turbine drive, a second such drive was ordered and is being installed at the present time.

At the Tumwater Paper Mills, Tumwater, Wash., one of the



Courtesy: De Laval Steam Turbine Co.

FIG. 12

Non-Condensing Steam Turbine Drive. St. Regis Paper Co.

RYTHER AND PRINGLE COMPANY CARTHAGE N.Y.

RYTHER SLASHERS

RYTHER SLASHERS are built to carry from one to eight saws, depending upon the length of logs received and the desired pulpwood size. The frame is of structural steel throughout. The machine parts are extra heavy and designed for maximum capacities. Each slasher is a complete unit and can be introduced in any cutting up system.

FOR CANADA REFER

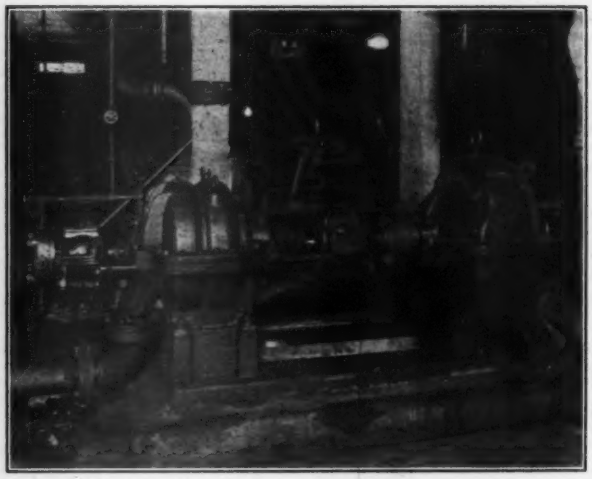
CANADIAN INGERSOLL-RAND COMPANY, LIMITED

10 PHILLIPS SQUARE, MONTREAL, P. Q.

newer mills reputed to be thoroughly up-to-date, two non-condensing steam turbines of 200-horsepower capacity are in service, one driving the constant speed shaft and the other the variable speed member. The speed range is 4 to 1. Still another of these non-condensing turbine paper machine drives among the newer mills is that at the Southern International Paper Company, Camden, Ark. This is of particular interest, as when the mill is completed it will be one of the largest kraft mills in the country. Here, two 350-horsepower drive sets are installed, designed for 180-pound initial steam pressure, 40 degrees superheat and 30-pound back pressure, speed range 6 to 1.

Applications of Bleeder and Mixed Pressure Turbines

When the power requirements are considerably in excess of those for the paper machines, that is to say, when the power requirements beyond the needs of the paper machine entail appreciable expense or if an available supplementary source of cheap power should be subject to interruptions of a costly nature, the



Courtesy: Terry Steam Turbine Co.

FIG. 14
Steam Turbine Drive of Boiler Feed Pump.

bleeder turbine will prove in many instances an efficient and economical unit for main power generation. A turbo-alternator or a direct current set should be installed, usually the former is preferable.

At the plant of C. H. Dexter & Sons, Inc., Windsor Locks, Conn., this practice has been followed with quite gratifying results, for the first bleeder turbo-alternator (Fig. 6) is said to have paid for itself in savings effected in about two years. The set is a 500-kilowatt unit, in service since January, 1923, and supplanted a reciprocating engine installation. The turbine is designed for bleeding steam at pressures from 5 to 30 pounds, the bleeder valve controlling automatically the amount of steam bled, as well as its pressure. This valve permits the steam not required for process work to flow over to the low stages of the turbine and keeps the bleeder pressure constant, irrespective of the amount of steam extracted.

The profitable nature of this installation led to a second and larger unit being purchased early in 1927, a 1,000-kilowatt turbine similar in design to the first and suitable for the same bleeder pressures. Before this repeat order was placed, however, a very thorough analysis was made of power costs, including dependence upon purchased power.

A mixed pressure turbo-generator set installation at the plant of the West Virginia Pulp and Paper Company, Tyrone, Pa., will serve to illustrate the flexibility of this type of unit and its adaptability to paper mill service. The set is a 1,250-kilowatt unit designed for operation with 170-pound gauge initial steam pressure, 160-degree superheat, and to exhaust into a vacuum of 28 inches. The turbine is provided with a connection from which steam may be extracted or through which low pressure steam at 25-pound gauge pressure may be introduced. The control of the steam bled or admitted to the turbine is entirely automatic, depending upon the condition in the process steam line. To appreciate the functioning of the mixed pressure turbine, it must be understood that there is also a non-condensing unit of the same capacity, operating on like initial steam pressure, but exhausting into the process steam line against 25-pound back pressure.

Under certain conditions, a large quautity of 25-pound steam is required in connection with the various paper mill processes, heating, drying, etc., more than the non-condensing unit can furnish. When this situation pertains, steam is extracted at 25-pound gauge pressure from the mixed pressure turbine to supplement the supply in the process steam line. Under other conditions, only a small quantity of 25-pound steam is required, less than that exhausted from the non-condensing unit. When this occurs, the surplus exhaust is admitted to the mixed pressure turbine, thereby cutting down the amount of high pressure steam taken by the unit, but not lowering the power output of the turbo-generator set. This interchange of steam is carried on automatically and quite obviously tends to hold up the average efficiency of the two turbine power units and to conserve steam.

Turbine Driven Auxiliaries

For driving the many auxiliaries in the paper mill power plant, the steam turbine likewise proves a compact, efficient and frequently an exceedingly economical unit. It is extensively used for operating boiler feed pumps, exciters, fans, blowers and other supplementary apparatus. In the boiler room, in particular, it effects substantial economies, in the small plant as well as in the large modern boiler room. A turbine blower to supplement chimney draft for hand-fired boilers, for example, frequently effects savings of from $1 to $4 a ton in the cost of the fuel burned, by making possible the use of much cheaper grades.

Such, briefly, is a sketchy review of steam turbine practices and applications in the paper making industry, for main power generation, for driving the paper machine and for operating many of the usual plant auxiliaries. The unit has been responsible, unquestionably, for much of the tremendous development made in the economical and efficient operations of pulp and paper mills during the past decade.

No Change in Jones Business or Policy

PITTSFIELD, Mass., March 19, 1928.—The passing away recently of E. A. Jones, president and treasurer of the E. D. Jones & Sons Company, manufacturers of paper making machinery, it is authoritatively stated, will not in any manner affect the future of the company. The enviable reputation of the concern in the industry has been built up as the result of sterling business integrity practiced during two generations, and the company will in the future continue to manufacture the same high grade machinery as in the past, and will not in any respect change its policy or business methods which have made it so widely and favorably known in its particular field.

Erie City Iron Works Opens Chicago Offices

The Erie City Iron Works, of Erie, Pa., announces that a direct sales office of the organization has been established at 122 South Michigan Avenue, Chicago, with Charles B. Acheson as district manager, J. R. LeVally as special engineer and D. F. Lytle as sales representative.

Another sub-office of the Erie City Iron Works has been established in the Chicago district with E. J. Clerget in charge at 511 Traction Terminal Building, Indianapolis, Ind. This move is part of the plan of the organization to bring experts in its field closer to the user of steam power plant equipment.

New York Trade Jottings

C. E. Dobson, secretary and treasurer of the Southern Kraft Association, with headquarters at New Orleans, La., was a New York visitor last week.

* * *

John Stadler, of the Lake St. John Power and Paper Company, Ltd., Dolbeau, Quebec, was a prominent New York visitor last week.

* * *

The National Association of Gummed Tape Manufacturers is scheduled to meet at the Hotel Commodore, New York, on Tuesday, March 27.

* * *

Harry L. Derby, president of The Kalbfleisch Corporation of New York, has returned from a trip through European countries. He reports business conditions, particularly in Germany, on the upswing.

* * *

Dr. C. A. Schenck, the well known international forester, of Darmstadt, Germany, who has been studying the paper and lumber industries in the Far West for the past two months, sailed for Europe last Saturday aboard the steamer *Nieuw Amsterdam*.

* * *

The regular weekly luncheon and meeting of the New York Division of the Salesmen's Association of the Paper Industry was held at the Canadian Club last Monday, when a satisfactory attendance enjoyed a most interesting session.

* * *

The Binders Board Manufacturers Association is to meet at the Canadian Club, New York, Thursday, March 29. The three years' advertising campaign has been approved and will be inaugurated in the near future.

* * *

The Supply and Equipment Section of the American Paper and Pulp Association, formerly the Supply and Equipment Association, is now installed at headquarters, 18 East 41st street, New York. The affairs of the section will be temporarily looked after by W. N. Wilkinson, president of the former supply and equipment organization.

* * *

The John Johnson Turbo-Mixer Corporation has leased a suite of offices on the 40th floor of the Woolworth Building, in New York City, as general offices of the Corporation. In addition an extensive laboratory has been leased nearby for research, development and experimental work in connection with the mixing problems of the many industries served by this corporation.

* * *

George H. Berlin, for over twenty years associated with the Berlin & Jones Company, Inc., envelope manufacturers, in New York City, has severed relations with that company and has opened offices at 501 Fifth avenue, where he will conduct business as direct mill representative for various lines of paper selling, principally in the metropolitan district of New York. He will also deal largely in envelopes, buying direct from manufacturers for his individual account.

* * *

William Harrison, the well known English paper manufacturer, gave an exceptionally interesting address before the National Industrial Conference Board at the Hotel Astor last Thursday. Many prominent members of the paper industry were present, including C. A. Crocker, president of the Chemical Paper Manufacturing Company; David L. Luke, president of the West Virginia Pulp and Paper Company; Ernest R. Behrend, president of the Hammermill Paper Company; Frank L. Stevens, president of the Stevens & Thompson Paper Company; R. S. Kellogg, secretary of the News Print Service Bureau, and O. M. Porter, secretary of the American Paper and Pulp Association.

Herman Lostfogel, treasurer, Sanitary Paper Supplies, Inc., 260 Fifth avenue, New York, is collecting a fund for Mrs. Frances Carl, the widow of a paper salesman for the Tulip Container Corporation, College Point, and for a number of years previous for the Kuhmacker Manufacturing Company, New York, who died February 13 leaving his family in destitute circumstances. Besides the widow, the Carl family consists of a baby girl about one year old and a little girl about three years old. Mr. Lostfogel, who has investigated, believes this is a deserving charity and will be glad to receive contributions from paper men until a reasonable amount is collected to enable the widow to adjust herself to her changed circumstances.

Testing Rag and Wood Pulp Stock

Some sixteen check or test volumes have just been distributed to libraries willing to undertake a comparison of the wearing quality of rag stock as compared with wood pulp stock.

The H. W. Wilson Company, of New York, has just published a ten pound volume of 1,500 pages, called "Union List of Serials in Libraries of the United States and Canada." It was issued in two editions, one printed on an all rag stock made by the Valley Paper Company of Holyoke, identical with "B. R. book" in quality, though slightly thinner; the other No. 38 special, extra strong, m. f. book, pickwick color, 38 x 25-50/500 testing 18 points Mullen, made by the Kennelly Paper Company.

This was taken by practically all the libraries of the United States and Canada. To make sure that a test was made where a man could be sure that conditions of the tests were identical for two sample volumes sixteen check volumes were made up of alternate signatures of the Valley rag stock and the Kennelly sulphite stock. These were sent to libraries in Boston, Cambridge, Providence, New Haven, New York, Philadelphia, Washington, Austin, St. Louis, Chicago, Minneapolis, Denver, Berkeley, Stanford, Seattle, fairly well distributed between the Atlantic and Pacific sea level, the south and the north, the Mississippi Valley and the Rocky Mountain region.

Some years from now it may be possible to compare these books with one another and to draw some conclusions as to the way the different sections wore. When that is done a man may be able to say that here is one instance where one kind of paper wore better than another when conditions of use were identical.

Bids and Awards for Government Paper

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., March 21, 1928.—The Government Printing Office has received the following bids for 36,000, 9½ x 15 High finish manila filing jackets; United States Envelope Company, at $18.55 per M; Oles Envelope Company, $29.24; R. P. Andrews Paper Company, $31.30; Wolf-Detroit Envelope Company, $28.35; Western States Envelope Company, $31.20 less 2 per cent; Charles G. Scott & Company, $30.99; T. A. Cantwell & Company, $31.50; and Hano Paper Corporation, $32.75.

The following bids were also received for 100,000 pounds of 50 per cent rag, white M. F. book paper; American Writing Paper Company, at 12 cents per pound; Whitaker Paper Company, at 14.5, 12.5 and 10.25 cents. Also for the same 75 per cent rag; American Writing Paper Company, 13.5 cents; Whitaker Paper Company, at 16.75, 14.75, and 12.5 cents.

Barton, Duer & Koch have been awarded the contract for furnishing the Government Printing Office with 1,500 sheets of 22 x 28" mounting board at $4.90 per C sheets, bids for which were received on February 24.

Paper Price Index

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., March 21, 1928.—The February wholesale price index for paper and pulp is given by the Bureau of Labor and Statistics, Department of Labor at 90.9 compared with 90.9 for Januaary and 92.9 for February of last year taking 1926 at 100.

PAPER TRADE JOURNAL
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Vol. LXXXVI New York, March 22, 1928 No. 12

AMERICAN FOREST WEEK

President Coolidge has officially designated the week of April 22-28 for nation wide observance of the annual "American Forest Week." The President set apart the week, he said, "for public discussion of our forests and of what must be done to safeguard and restore them." He emphasized particularly the need for suppressing the forest fire evil, and pointed out the benefits to agriculture, industry, commerce, and national life that will result from making the forest lands of the United States fully productive of continuous timber crops.

"The rehabilitation of our forests demands first of all that the forest fire evil be suppressed," the President declared. "Many of the forested States, with the cooperation of timberland owners, have undertaken organized protection against forest fires; and in recent years, under the Clarke-McNary law, the Federal Government has given its support to the movement. This great cooperative enterprise must be extended and strengthened until every forested county in the United States is safeguarded against forest fires.

"But we are still far from the goal of complete protection. Every year, on the average, 80,000 fires scourge our woodlands, steadily undermining their vitality. For this bad situation, the blame falls equally on us all. Public agencies rarely provide adequate protection against fire, the timberland owner is too often indifferent to his property, the forest worker is too often neglectful of the future forest, the average citizen is too often careless with fire in the woods. We must all gain such respect for the forest that its destruction through indifference or carelessness shall be unthinkable.

"We can not permanently abuse our forests with impunity. The soil is the ultimate source of all our wealth and of life itself. One-fourth of our American soil is best suited for forests. Much of this land is already idle. More of it is being made idle by destructive logging and fire. Yet we can not safely permit our forest land to lie fallow and useless any more than we can permit our farms and factories to be idle.

"To make our vast empire of forest land fully productive of continuous crops of timber will have momentous consequences in our national life. It will give agriculture the advantage of a new and valuable crop. It will afford permanent employment to millions of men in the forest industries. It will provide raw materials for many industries. It will furnish traffic for our railroads. It will maintain foreign and domestic commerce. It will restore our forests as conservers of soil and water, and as givers of health and pleasure to our people.

"We already have made a beginning in forest renewal; but the task is stupendous, and we should permit no satisfaction over what has been done to blind us to the magnitude of what remains to be done."

This year will mark the eighth annual observance of American Forest Week, President Harding in 1921 having issued the first proclamation which brought the Federal Government behind the movement. The week this year, as it has for the past two years, will assume an international scope through the fact that Canada will observe its "Save the Forests" week at the same time.

The week in the United States will be directed by an American Forest Week Committee, of which Theodore Roosevelt of New York is chairman. A large number of organizations, representing a wide variety of interests, are cooperating, among them associations representing outdoor, wild life, and recreational interests, foresters and forestry associations, the lumber industry, consumers of forest products, labor, scientific, civic, agricultural, press, church, and women's organizations, as well as the State and Federal Governments. Local Forest Week Committees are being organized in every State.

In his proclamation, President Coolidge urges that during the week "all citizens and appropriate organizations—including public officials, legislators, business organizations, educators, editors, clergymen, landowners, and others—give thought to the preservation and wise use of our forests, to the end that energetic forest policies will be adopted in all communities."

THE ENGINEER IN BUSINESS

The opportunities for the engineer in business are greater today than ever before, according to Mr. W. S. Hovey, president of Fairbanks, Morse & Co., who spoke on "The Engineer's Part in Business" before the Chicago Section, American Society of Mechanical Engineers, as a part of the Midwest Power Conference program in Chicago recently. In order to take advantage of these opportunities, however, Mr. Hovey pointed out that the engineer of today must be commercially minded.

While this is true in all lines of business endeavor it is particularly true, according to Mr. Hovey, in connection with the manufacture, distribution and use of specialized products for industry. The trend today in manufacturing and selling, he said, is based entirely on the needs of the customer. It is, therefore, more important to supply what the customer needs than what the manufacturer has to sell. It is here that the modern engineer takes his place in both production and sales.

Modern business, stated Mr. Hovey, is not only depending more and more on the engineer to analyze the requirements of the customer but is also calling on him to help increase the profits in business. Competition is so keen that the waste and loss of a few years ago is the profit of today. The engineer, through a careful study of production methods and the elimination of waste, has been able to reduce the amount of material entering into products without in any way decreasing the quality or the factor of safety.

The engineer in this respect, stated Mr. Hovey, must be a broad gauge man.

To produce results which would be beneficial to business Mr. Hovey suggested that the engineer must have the ability to co-operate. He must be willing to work with men and to take suggestions, whether these suggestions come from the workman in the shop or from an official in the organization. The struggle for improvements in design, in production and in the use of equipment is greater than ever before. And behind all of this constant struggle, said Mr. Hovey, is the motive of service to the customer, and in so serving to bring a reasonable compensation to the stockholders from the investment in the business.

If the engineer constantly develops a commercially minded viewpoint he has a greater opportunity to take an important place in business. The training and experience the engineer has had of dealing with facts, of being required to think clear through and base his conclusion upon facts was pointed out by Mr. Hovey as fitting him perhaps better than any other profession for such important positions in the business world.

In bringing these thoughts to the attention of the American Society of Mechanical Engineers Mr. Hovey cited incidents from his own thirty years of manufacturing and administrative experience to show how the engineer can increase the profits of a business or can cause losses by lack of the commercial viewpoint.

Shirley W. Allen Accepts Professorship

Shirley W. Allen, who for the past four years has served The American Forestry Association as Forester at Washington, has resigned to become Extension Professor of Forestry in the School of Forestry and Conservation at the University of Michigan. He will take up his new duties April 1.

Mr. Allen's work in Michigan will be directed toward the use of forestry material in the regular courses taught in the public schools. This work, while something of a new development in forestry, has been proposed by S. T. Dana, Dean of the Michigan Forestry School, who is convinced that the forestry slant can be given in civics, biology, mathematics and other subjects. Mr. Allen will also devote part of his time to developing forestry projects for clubs in Michigan which have evidenced interest in forests and trees.

While with The American Forestry Association Mr. Allen has been especially active on the McNary-Woodruff Bill, which provides for the acquisition of forest lands in the eastern United States, and on the McSweeney-McNary Bill, which provides for continuous forest research by the Federal Government.

Mr. Allen received his forestry training at Iowa State College, at Ames, and during his early years worked for lumber companies in northern Minnesota. In July, 1909, he joined the United States Forest Service, being assigned to the Pike National Forest, in Colorado. Later he was transferred to the Stanislaus National Forest, in California. After serving in various capacities on a number of California National Forests, Mr. Allen became supervisor of the Angeles National Forest in 1913, but resigned the following year to engage in extension work for the New York State College of Forestry. Four years later he joined the staff of the Forest Products Laboratory at Madison, Wis., as industrial examiner. In 1921 he returned to California and entered the retail lumber business. He was appointed Forester in The American Forestry Association in 1924.

Mr. Allen is a member of the Society of American Foresters and for several years has been on the editorial board of the *Journal of Forestry*. For the past two years he has been secretary of the American Forest Week Committee.

Mr. Bullock Speaks on the Tariff

"Advices from abroad indicate that some Americans in Europe as well as in this country are aiding foreign industry in a campaign to break down the enforcement of the Tariff Laws of the United States," said Warren B. Bullock, manager of the Import Committee of the American Paper Industry, before the Yonkers Rotary Club last week. Mr. Bullock, in speaking on the subject, "American Markets for American Products," devoted most of his time to a description of the methods used by the paper industry to secure proper enforcement of existing tariff laws for the protection of American manufacturers.

"There may be a difference of opinion as to the need for a protective policy for the United States," he said, "but if there is to be tariff revision it should be by legislation and not by nullifying the enforcement of existing law.

"The European propaganda is aimed against the maintenance in Europe of American customs officers to guard against undervaluation of commodities exported to this country. Those officers have the duty of assuring this Government that foreign goods intended for the American market are properly valued and classified so that they shall pay the rate of duty intended.

"The present campaign is intended to eliminate this supervision of foreign shipments. The result would be to allow the foreign shippers to put any value they choose upon the commodities they ship. In other words, the foreigners would be able to fix the amount of duty they wish to pay the United States.

"In aiding this foreign campaign it must be that the American allies of the foreign interests do not realize the ultimate effect of the European program. The success of this campaign means the substitution of foreign made goods for the products of American factories."

Willapa Pulp & Paper Co. Lets Contract

[FROM OUR REGULAR CORRESPONDENT]

PORTLAND, Ore., March 5, 1928.—The Puget Sound Bridge and Dredge Company has received the contract for construction of a 60-ton pulp mill to be built between Raymond and South Bend, Wash., by the Willapa Pulp and Paper Company, according to an announcement made recently.

The pulp mill plant, including cut-up mill, kilns and machinery, must be completed by August 1, under contract terms. This will cost approximately $1,000,000.

The Willapa Pulp and Paper Company has its headquarters in Portland. R. A. Swain is president. Members of the board of directors include Jay Bowerman, John P. Kavanaugh, Ed Cusick, Thomas Mahoney and Sam Graf. The company chose Portland as the official location of the company because the executives believe that this city will be the most convenient center of the pulp and paper industry in the northwest.

As previously reported the entire output of this plant has already been contracted to Bulkley, Dunton & Co. of New York for the next ten years. The pulp company owns some 300,000,000 feet of timber adjacent to the mill which has cruised 93 per cent spruce, hemlock and white fir.

The location of the new mill is within 12 miles of the ocean and is accessible to the largest freighters.

Boilers and some other machinery are already been unloaded at the site. Provision is being made so that the capacity can be increased to 500 tons a day when this seems justified.

H. & V. Paper Contributes to Lindbergh's Success

Hollingsworth & Vose Company, manufacturers of rope and jute papers, state that they have authoritative information that a special paper made by them and used in the Spirit of St. Louis contributed materially to Col. Chas. A. Lindbergh's success in his New York to Paris non-stop flight, which proves that quality will always prevail when put to the crucial test.

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Edited by
RONALD G. MACDONALD, Secretary

A Study of Fourdrinier Wire Life*

By Dr. John Campbell,[1] and Mr. H. G. Wales [2]

It has been noticed that the useful life of a Fourdrinier wire on a news print machine in many mills is less in the summer than in the winter. The reason for this is very obscure, and it is the object of this paper to throw some light on this phenomenon.

Fourdrinier wire is composed usually of a phosphor bronze in the warp wires and brass in the weft wires. The reason for this is that the warp wires have to stand abrasion and bending, whereas the weft wires simply act as a filler, and therefore can be made of a cheaper material.

In order to find out how the wire life varied from month to month, a chart was prepared, as shown in Table 1 and Fig. 1, in which the life of the wire is plotted along the ordinate, or vertical, axis, and the corresponding months are plotted along the abscissa, or horizontal, axis.

TABLE 1

Month	Jan.	Feb.	March	April	May	June
Wire life in days..	25	25.4	24.3	24.4	24.6	22.6
Month	July	Aug.	Sept.	Oct.	Nov.	Dec.
Wire life in days..	20.5	18.8	19.8	22	22.2	25.9

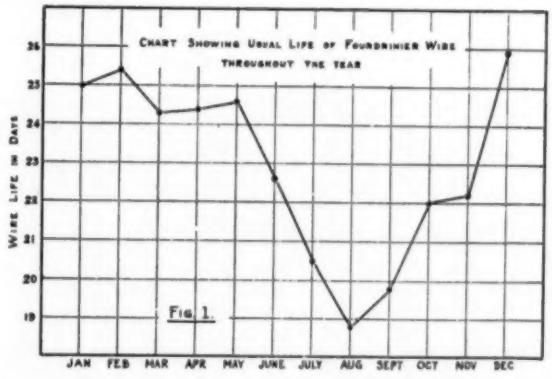


CHART SHOWING USUAL LIFE OF FOURDRINIER WIRE THROUGHOUT THE YEAR
WIRE LIFE IN DAYS
JAN FEB MAR APR MAY JUNE JULY AUG SEPT OCT NOV DEC
FIG. 1.

In this chart it will be seen that during the months of June, July, and August, the wire life rapidly decreases; but as the colder months come on, that is, during October, November, December, January, February, and March, the life of the Fourdrinier wire again reaches a maximum.

This chart stirs up in our minds the thought that some factor is operating in the summer months that does not operate, or that operates only to a slight extent, during the winter months. The factor that immediately suggested itself is temperature. So with this in mind, Fig. 2 was plotted from Table 2.

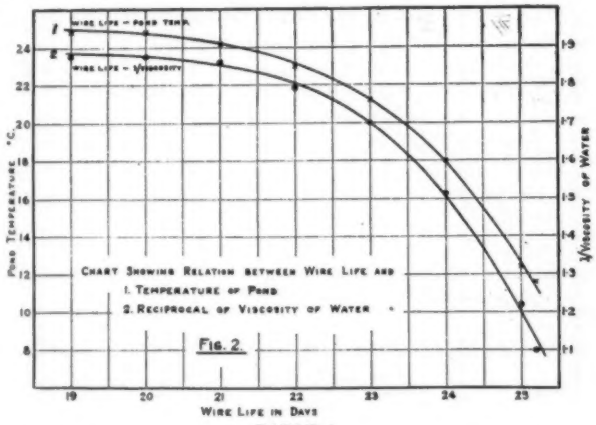

1 WIRE LIFE – POND TEMP.
2 WIRE LIFE – 1/VISCOSITY
POND TEMPERATURE °C.
1/VISCOSITY OF WATER
CHART SHOWING RELATION BETWEEN WIRE LIFE AND
1. TEMPERATURE OF POND
2. RECIPROCAL OF VISCOSITY OF WATER
FIG. 2.
WIRE LIFE IN DAYS

TABLE 2

Wire life in days	Temp. °C. of pond	Reciprocal of viscosity of water
19	23.50	1.94
20	23.50	1.94
21	23-10	1.91
22	21.85	1.85
23	20.00	1.76
24	16.30	1.60
25	10.40	1.32
25.2	8.00	1.28

Here the wire life is plotted along the vertical axis, while the temperature of the stock in the head box is plotted along the horizontal axis. This chart shows in a very striking manner that temperature is certainly an important function of Fourdrinier wire life.

Let us now consider in some detail the principal factors that affect wire life, and how they are influenced by temperature.

The first factor that should be considered is abrasion, and it is generally assumed, and we believe correctly, that most of the abrasion of the wire is due to the suction boxes. Of course, if there is any slippage, a certain amount will come from the couch roll. When the abrasion of the wire by the suction boxes is examined with regard to temperature, it is seen that during the warmer months, the lubricating action of the water between the wire and the suction boxes is less. In other words, due to the

* Paper read at the Annual Meeting of the Technical Section, Canadian Pulp and Paper Association, Montreal, Jan. 25-26, 1928.
[1] Director of Research, Abitibi Power and Paper Co., Iroquois Falls, Ont.
[2] Research Department, Abitibi Power and Paper Co., Iroquois Falls, Ont.

decrease in viscosity of the water, which is a partial measure of its lubricating property, there is more grinding action between the covers of the suction boxes and the Fourdrinier wire during this season.

In Fig. 2, it will be noticed, is plotted the reciprocal of the viscosity of the water leaving the wire, and the wire life in days. It will be seen from this curve, when compared with the temperature-wire life curve, that the two run parallel, which is to be expected, since viscosity is a function of the temperature.

With regard to the couch roll, the wearing out of the wire due to the warmer water should be less in the summer than in the winter; that is, due to the decrease in lubricating effect of the water, there will be less slippage between the wire and the couch, and, therefore, less abrasion.

In summing up, the effect of temperature on the abrasion of the Fourdrinier wire by the suction boxes is increased during the warmer months; but any abrasion due to the lower couch roll should be diminished during the same months.

The second factor that might affect wire life is the acidity of the water due to addition of alum.

In order to determine the corrosive action of alum on Fourdrinier wire, solutions of alum of various strengths were made up. Strands of Fourdrinier wire were placed in these solutions, which were kept at a constant temperature and left for 21 days. At the end of this period, the wires were taken from each solution and tested for decrease in weight, tensile strength, and percentage loss in elongation.

A similar experiment was then repeated at a higher temperature, in order to determine the influence of temperature on the corrosion of the wire by the alum. The results of these tests are shown in Figs. 3, 4, and 5, and Tables 3, 4, and 5.

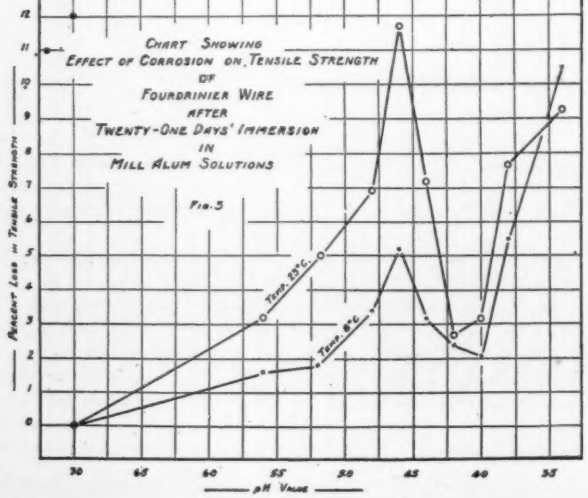
In Fig. 3 is plotted the percentage loss in tensile strength along the vertical ordinate, and the pH value of the alum solutions along the abscissa, for temperatures of 8 degrees C. and 23 degrees C.

In Fig. 4 is plotted the percentage loss in extension of the wire on the vertical axis, and the pH value of the alum solution along the horizontal axis, for temperatures of 8 degrees C. and 23 degrees C.

In Fig. 5 is plotted the percentage loss in weight along vertical axis, and pH values of the alum solution along the horizontal axis, for temperatures of 20 degrees C. and 40 degrees C.

TABLE 3
PERCENTAGE LOSS IN TENSILE STRENGTH ON A 4.9 CM. LENGTH OF WIRE. TIME OF IMMERSION, 21 DAYS

	pH value									
Temp.	7.0	5.6	5.2	5.0	4.8	4.6	4.4	4.2	4.0	8.3	3.4
23° C.	0	3.18	5.04	5.30	6.88	11.70	7.16	2.65	3.17	7.69	9.25
8° C.	0	1.60	1.85	2.62	3.40	5.25	3.16	2.37	2.09	5.51	10.50



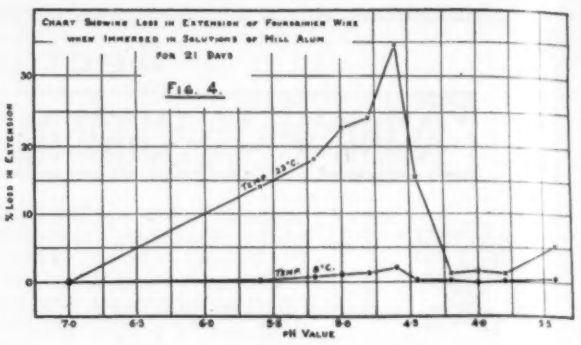


Chart Showing Loss in Extension of Fourdrinier Wire when Immersed in Solutions of Mill Alum for 21 Days
Fig. 4.
Temp. 23°C.
Temp. 8°C.
% Loss in Extension
pH Value

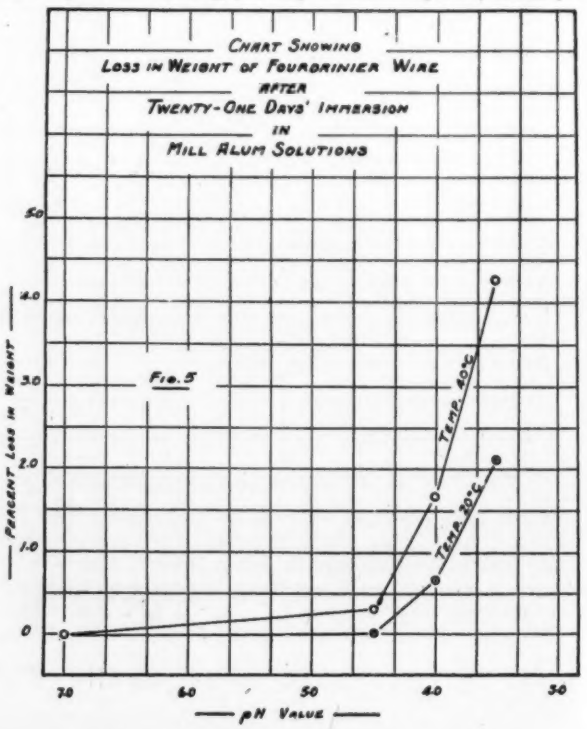
TABLE 4
PERCENTAGE LOSS IN EXTENSION ON A 4.9 CM. LENGTH OF WIRE. TIME OF IMMERSION, 21 DAYS

	pH value									
Temp.	7.0	5.6	5.2	5.0	4.8	4.6	4.4	4.2	4.0	3.8	3.4
23° C.	0	14.2	18.3	22.8	24.3	34.6	15.7	1.3	1.7	1.3	5.4
8° C.	0	0.2	0.8	1.2	1.4	2.2	0.4	0.4	0	0.2	0.6

TABLE 5
PERCENTAGE LOSS IN WEIGHT DUE TO CORROSION. TIME OF IMMERSION, 21 DAYS

	pH values							
Temp.	7.0	6.5	6.0	5.5	5.0	4.5	4.0	3.5
20° C.	0	0	0	0	0	0	.65	2.1
40° C.	0	0	0	0	0	.3	1.65	4.25

From Figs. 3 and 4, it will be seen that at a pH value of 4.7 the percentage loss in tensile strength and extension of the wire reaches a maximum; also at a pH value of 4.2 a minimum point is reached on these charts. Any stronger solutions of alum than 4.2, that is to say, at lower pH values, the corrosive effect of the alum again asserts itself. In the chart, Fig. 5, the loss in weight due to the corrosion of the alum takes a rapid rise at pH value of 4.5. In dilute solutions of alum, that is, at high pH values, the corrosive effect is scarcely noticeable even at a temperature of 40 degrees C. The reason for these maximum and minimum points on the curves is probably due to the fact that below a pH value of 4.7, some particular constituent of the wire goes into solution, or perhaps there is an absorption of hydrogen ions; in stronger solutions, that is, above 4.7 to 4.2, there is deposited on the surface of the wire a protective coating, probably aluminum hydrate, whose pro-



tective influence reaches a maximum at pH of 4.2. Above 4.2, the protective influence of the aluminum hydrate entirely disappears, and a straight solution of the constituents of the wire results.

For purposes of comparison, Fig. 6 is included, showing the relation between pH value of mill alum solutions in distilled water, and percentage alum content.

These effects as outlined above were visually noticed on examination of the wire after being removed from the alum solutions.

Altogether it may be said that the effect of temperature on corrosion of Fourdrinier wire by mill alum, certainly has an important influence on wire life

Bending

The third and last factor that will now be considered is bending. As the Fourdrinier wire revolves on the machine it undergoes on its return journey from the couch to the breast roll a certain amount of bending up and down, which must have an important influence on the life of the wire.

During the summer months, it has been noticed that the wire surface in the interstices of the Fourdrinier wire get partly coated with a hard brown translucent material; it is apparently deposited from the water, and is specially noticeable on the portion of the wire under the deckle strap.

In Fig. 7 is shown a photomicrograph of a piece of wire with this material deposited in the interstices, and for purposes of comparison, Fig. 8 shows another wire without this deposit, but of a slightly larger mesh.

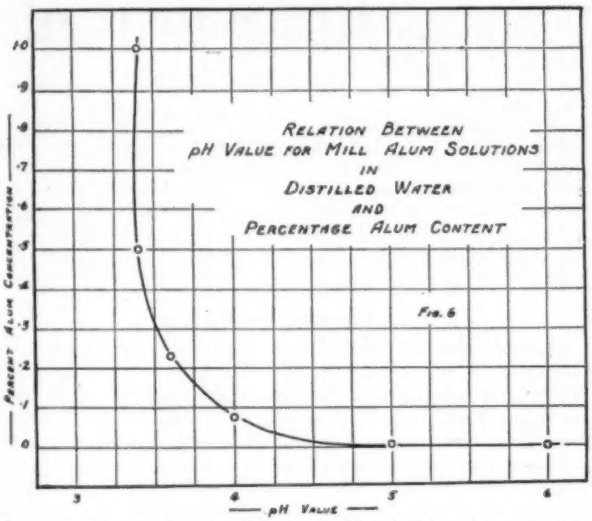
The deposit on analysis shows the following composition:

	Per cent
Alumina (Al_2O_3)	17.8
Loss on ignition	82.2
	100.0

The material lost on ignition is of organic origin, and very probably is humic acid, produced from the wood. This deposit on the wire is increased by increasing the alkalinity of the white water by adding say, fresh water, which in most cases, contains carbonates and bicarbonates of lime and magnesia. The deposit is also increased, as stated before, by temperature, like most chemical reactions, and makes it necessary for the wire to be trimmed more often in the summer than in the winter. If, however, the edges of the wire can be kept clean, the number of trimmings is reduced.

Effect of Deposit

Let us now return and investigate the effect of this deposit on the bending in and out of the wire. When the wire bends on a roll, the warp wire touches the weft, or shoot, wire, and in bending it conforms to the round surface of the shoot wire. Also, if the portion of the warp wire touching the roll is in compression, then



the warp wire on the opposite or top side will be under expansion. Now, if a portion of the deposit works its way in between the surfaces of the warp and shoot wires, it will cause uneven stress on the warp wire, and cause it, in time, to crack out. This, then, is the summer effect of temperature on the bending of the Fourdrinier wire.

Summary

It has been shown in this paper that the decrease in wire life is a direct function of the temperature of the stock in the head box.

The effect of temperature on the main factors that affect wire life, such as erosion, corrosion, and incrustation, is then discussed, and it has been shown that the effect of each of these factors is most decidedly increased by temperature; the predominating factor will probably be different for each mill, due to different conditions.

In closing we wish to thank J. E. Patterson, mill manager, and E. Silver, general superintendent, for their helpful suggestions and advice.

The Technical Association office has recently been the recipient of an attractive Winkler-Leer etching, a gift from Harold N. Hill, of Philadelphia, a manufacturer of paper mill supplies.

The etching is entitled "The Magazine Grinder" and illustrates the interior of a mill in which is installed a battery of such grinders.

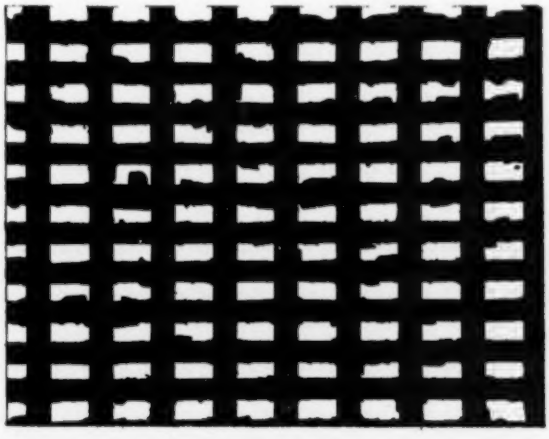


FIG. 7
Photomicrograph showing deposit on Fourdrinier wire.

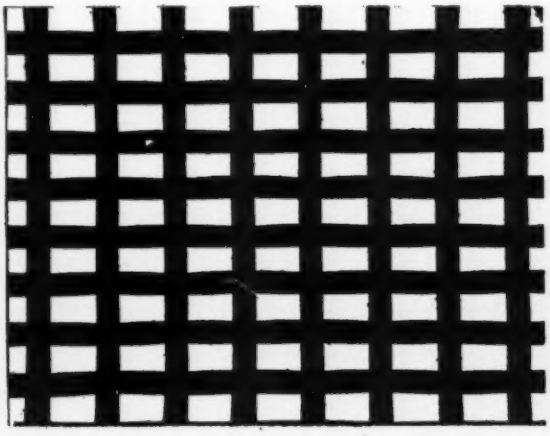


FIG. 8
Photomicrograph showing Fourdrinier wire without deposit.

Resistance of Printing Papers

By E. O. Reed [1, 2]

The purpose of this sub-committee is to develop a method or methods for measuring the penetration of printing inks into printing papers, or the resistance of printing paper to the penetration of printing inks. Therefore, the methods developed for this purpose will not furnish a complete measure of the printing quality of a paper. The printing qualities of paper also depend to a considerable extent on the character of surface, finish, gloss, adherence of coating on coated papers, etc.

Investigation Work

Considerable investigational work has been conducted during the past year for the purpose of developing a satisfactory laboratory method for measuring the ink resistance of printing papers. This work has been confined chiefly to mimeograph, news print and book papers and has been carried on by the chemists of the Division of Tests and Technical Control of the Government Printing Office. The committee has not had an opportunity to discuss the work and the following report is made by the chairman, based on the results of the work at the Government Printing Office.

A study was made of methods proposed for measuring the degree of sizing of paper and it was shown that these tests furnish reliable information as to the relationship of writing inks to paper, but will not furnish a reliable measure of the ink resistance of paper to oil base inks such as printing and mimeograph inks.

From the results of the investigational work it is our opinion that the most satisfactory method for measuring the resistance of paper to printing inks will be obtained by using the vehicles employed in the manufacture of printing inks, rather than the printing inks themselves.

The penetration of printing inks into paper is due primarily to the vehicle used in the manufacture of the ink. Printing inks may be roughly divided into three broad classes, in accordance with their drying qualities. A list of the various vehicles which may be used in these three classes is given herewith. The division is made on the following basis: (1) Inks which dry chiefly by absorption, (2) Inks which dry both by absorption and oxidation, (3) Inks which dry chiefly on the surface of the paper, by oxidation.

Vehicles Commonly Used

The vehicles given in the following outline are those commonly used in printing inks of the respective classes:

CLASS 1
VEHICLES USED IN PRINTING INKS WHICH DRY CHIEFLY BY ABSORPTION

News Inks	Mimeograph Inks	
Mineral Oil	Mineral Oil	Turkey Red Oil
Rosin Oil	Castor Oil	Glycerin
Rosin Oil Varnish	Rosin Oil	Rapeseed Oil
	Rosin Oil Varnish	Peanut Oil
		Linseed Oil Varnishes

CLASS 2
VEHICLES USED IN PRINTING INKS WHICH DRY BOTH BY ABSORPTION AND OXIDATION

Book Inks

Rosin Oil
Rosin Oil Varnish
Small amounts of mineral oil
Various bodied linseed oil varnishes
Special varnishes, composed of stearin, pitch, mineral oil, and rosin oil.

Driers are frequently used in these inks.

CLASS 3
VEHICLES USED IN PRINTING INKS WHICH DRY CHIEFLY BY OXIDATION

Halftone Ink	Job Ink	Bond Ink
Linseed oil varnishes	Linseed oil varnishes	The same vehicles as
Small amounts of mineral oil, rosin oil, rosin oil varnish.	Rosin oil varnish	those used in job
	Small amounts of mineral oil.	inks, but having a heavier body.

Driers are used in all of these inks.

In the manufacture of printing inks, pigments are used which are insoluble in oil or water. Carbon blacks are insoluble, but certain colored pigments may bleed slightly in oil or water. Therefore, the pigments are not dissolved in the vehicles but are ground with them, the vehicle holding the pigment in suspension. Exceptions to this would be dye toners which are used in a few inks, such as toned news ink.

Use of Printing Ink Itself Unsatisfactory

The use of printing ink itself for measuring the resistance of paper to printing inks would be unsatisfactory for the following reasons:

1. Difficulty in securing standard inks. The wide range of printing inks required for various kinds of paper would make the results obtained by any one standard ink unsatisfactory.
2. The possibility of a change in the character of an ink after manufacture, due to reaction between the various ingredients.
3. The wide variation in quality of commercial inks offered for the same type of printing work.
4. The inability of accurately measuring test quantities and securing a satisfactory end point for the interpretation of the results.

From tests thus far conducted, it is our opinion that castor oil or No. 0000 linseed oil varnish will be satisfactory for measuring the resistance of paper to printing inks. Heavier varnishes cannot be handled to advantage for testing purposes and the information obtained by the lighter oils and varnishes will furnish data on the resistance of paper to any vehicle used. Mineral oils such as paraffin oil or kerosene, frequently used in inks, have been tried, also rosin oil varnish (a common vehicle used in the manufacture of printing inks), but these were not found as satisfactory as castor oil and No. 0000 linseed oil varnish. The rosin oil varnish was found too heavy in body and consumed too much time in making the tests. In addition, the physical characteristics of this vehicle vary with different lots of varnish. The range of results obtained with castor oil and No. 0000 linseed oil varnish were similar to those obtained with the other vehicles.

Two methods have been developed as the result of this work and are offered herewith for the consideration of the Association.

"Oil Flotation Method"

Apparatus and Chemicals—An evaporating dish or other shallow container 6 to 8 inches in diameter is filled three-fourths full of oil, in which a small amount of an oil soluble dye, such as blue news toner, has been dissolved. The dye renders the end point of the test more distinct.

Procedure—Samples two inches square, of the paper to be tested, are dropped on the surface of the oil. As the paper strikes the oil the time is noted with a stop-watch. The end point is reached when complete saturation or absorption of the oil through the paper leaves it a uniform gray or blue color. A hand lens is a decided aid in determining the end point. The number of seconds required for complete saturation is the result reported.

"Oil Drop Method"

Apparatus—A box with a ground glass top, containing an electric light, insulated so as not to affect the temperature of the ground glass plate; or better, some means of indirectly passing light through the ground glass plate by mirror reflection of the light. The light must be so located that it does not affect the temperature of the ground glass plate or the oil.

(1) A separatory funnel for dropping the oil. The stem of the separatory funnel used was drawn to such a diameter that it allowed a drop of distilled water of such size to fall that 25 drops at 70 degrees F occupied a volume of one cubic centimeter. (2) The funnel was held in a clamp so that the distance between the stem and the surface of the paper to be tested was 1¾ inches.

[1] Member TAPPI; Chief of Testing Section, Government Printing Office, Washington, D. C.
[2] Chairman Sub-committee on Resistance of Printing Papers.

Further work will be conducted in order to standardize the size of the drop used and the distance between the stem of the separatory funnel and the surface of the paper to obtain the most satisfactory results.

PROCEDURE—(3) The paper to be tested is placed on the ground glass cover of the box, and an area sufficient for testing exposed, the remainder of the paper covered by a dark blotter or paper. (4) A drop of the oil is allowed to fall on the paper. As the oil strikes the paper the stop-watch is started. The time is noted when the penetration of the paper is complete. This is coincident with the time at which the oil spot assumes a uniform translucency. It should be stated that the time for complete absorption of the drop is not considered.

(5) In both methods the tests should be made under controlled conditions. A temperature of 70 to 75 degrees F. and a relative humidity of 50 per cent were used by the Government Printing Office. All samples of paper, chemicals, and apparatus should be allowed to come to equilibrium with the standard conditions before making the tests.

A light oil or varnish may be used in both of the above tests, but it is recommended that U. S. P. quality castor oil be used with the Oil Flotation Method and No. 0000 linseed oil varnish be used with the Oil Drop Method. Definite specifications stating the physical constants for this linseed oil varnish will be prepared.

The paper should be tested on both the felt and wire sides. It has been noted that the absorption time varies with the side of the paper which comes in contact with the oil, the wire side being invariably the faster. In order to insure testing both sides of the paper, every second test on the same sheet of paper should be made on the opposite side from the first test. A total of ten tests on each sample of paper is considered sufficient. This allows of five tests on the wire side and five tests on the felt side of the sheet. The average result for each side of the paper is reported.

(6) Results of tests so far made by the Oil Drop Method and the Oil Flotation Method on the same paper appear to give similar ratings as to oil resistance. The time of making a test by the Oil Drop Method is considerably shorter than a test by the Oil Flotation Method.

What Has Been Proven

The results of the work, so far conducted, have definitely proven that the time of initial absorption of the oil does not check with practical tests with mimeograph or printing inks, and is not satisfactory for furnishing the information desired as to the ink resistance of the paper. It was found, however, that the time required for complete saturation of the paper by the oil furnished reliable information in this connection, which checked the results of practical tests with the respective papers. Complete saturation of the entire square of paper is the end point in the Oil Flotation Method, but only the complete saturation of the spot where the oil first strikes the paper is determined in the Oil Drop Method, not complete absorption of the drop of oil. The thickness and weight of the paper have a decided effect on the results of these tests. These factors have not been studied in connection with the two methods outlined, but future work will develop their relation to the results. However, tests should be compared on similar weight and grades of paper only.

Samples of ground wood mimeograph, chemical wood mimeograph, 30 per cent rag mimeograph, standard news print and machine finish book papers were tested by both methods. Practical printing tests were also run on these papers and indicated the laboratory test methods furnished satisfactory information as to the ink resistance of the respective papers.

The Government Printing Office is equipped with precision proof presses which will be used in future investigations, and have been utilized in the present work. This type of press is so constructed as to give definite control of pressure, ink distribution, and other factors necessary to determine the accuracy of a printing plate or type form. Tests are to be run on this type of press using standard grades of inks. These tests will be run under standard conditions and the results carefully compared with the results obtained with the laboratory methods proposed.

Conducted the Laboratory Work

The following members of the Government Printing Office Division of Tests staff conducted the laboratory work in connection with the development of these methods and cooperated in the preparation of this report: Robert H. Simmons, Assistant Paper Technologist; Douglas P. Clark, Assistant Chemical Technologist; and George G. Groome, Chemist Aid.

The attached table gives the results obtained using the two methods described herein for determining the ink resistance of printing papers.

TABLE OF TEST RESULTS

Kind of Paper	Weight Basis 1,000 sheets pounds	Thickness inch	Degree of Sizing Dry Indicator Wire seconds	Degree of Sizing Dry Indicator Felt seconds	Oil Resistance Oil Flotation Wire seconds	Oil Resistance Oil Flotation Felt seconds	Oil Resistance Oil Drop Wire seconds	Oil Resistance Oil Drop Felt seconds
News Print.....	24x36—64	.0025	13	20	143	169	40	50
	24x36—64	.0025	3	3	69	96	32	52
	24x36—64	.0025	3	3	75	103	25	32
Chemical Wood M. F. Book....	25x38—70	.0025	26	29	54	105	21	35
	25x38—70	.0025	19	25	65	82	23	27
Chemical Wood Antique Book..	25x38—100	.0040	33	37	80	125	27	43
	25x38—100	.0040	38	41	66	108	24	36
50 Per cent Rag M. F. Book....	25x38—80	.0035	41	45	47	82	117	24
	25x38—80	.0035	3	8	33	35	12	12
Chemical Wood Supercalend'd Book	25x38—90	.0025	40	43	96	159	35	52
Ground Wood Mimeograph ...	25x38—76	.0045	20	21	91	135	31	35
	25x38—76	.0045	28	35	48	111	18	36
Chemical Wood Mimeograph ...	17x22—40	.0040	24	35	67	64	19	21
	17x22—40	.0040	Instantaneous		80	83	19	25

National Research Council and TAPPI

During the Annual Meeting of the Technical Association on February 23rd the following resolution was passed:—

"WHEREAS the National Research Council has shown such an unusual spirit of cooperation in permitting Dr. West to devote a certain portion of his time to the compilation of the bibliography of literature relating to pulp and paper:

THEREFORE, BE IT RESOLVED that the Technical Association of the Pulp and Paper Industry in Annual Convention assembled, does hereby extend to the National Research Council a unanimous vote of thanks as an expression of its sincere appreciation of the valuable assistance which has been rendered to the Association."

By way of response Vernon Kellogg, Secretary of the National Research Council sent the following letter to the Secretary of TAPPI.

"The National Research Council is glad that Doctor West has been able to be useful to the Technical Association, and appreciates the friendly resolutions adopted at the recent session of the Association.

"I hope that the National Research Council and the Technical Association of the Pulp and Paper Industry may have other pleasant cooperative relationships in the future."

American-Scandinavian Industrial Fellowships

There are at present three candidates for these fellowships and very soon at least one appointment will be made, inasmuch as Baron Mannerheim, of Sweden, has announced that he will receive an industrial fellow in his mill whenever the American-Scandinavian Foundation is ready to recommend a candidate.

The Foundation is depending upon the Technical Association to secure such candidates. A candidate should be a graduate of a technical school and preference will be given to men who have had practical industrial experience. Applications for the fellowship should be sent to the Secretary of TAPPI and in addition to a complete report of the candidates' education and experience there should be several accompanying letters from professors, employers and others that endorse the candidacy of the applicant.

Training for the Industry

By Allen Abrams [1, 2]

About nine months ago this Association, perceiving the necessity for closer coordination between the colleges and the pulp and paper industry, created a committee to further such relations.

In its first report at the Fall Meeting in Middletown, your committee laid down the program it proposed to put into operation and showed the progress which had been made up to that time. Since that plan has not been materially altered it will be well to repeat the essentials and then to indicate how far we have gone.

First, to get the proper perspective on these activities and to appreciate their very great importance to the future of our industry, let it be stated that this committee visualizes a sympathetic relationship entered into between the student and the industry, beginning in the student's first or second college year and maintained by due contacts throughout his course. Upon graduation, the student will then have a fair picture of this industry and its possibilities. He will know whether it is to his liking and whether it offers the future he has in mind. On the other hand, the industry will have sized up the student and will know whether he is desirable material.

After a thorough—almost exhaustive—consideration of plans now in operation your committee feels the following to be the logical steps in pursuing such a program for this industry.

1. Division of the country into geographical districts or areas, each area having on the one hand its pulp and paper mills and on the other hand schools with whom contacts may be maintained. Each cooperating area to have a director whose duty it is to set up the necessary machinery for carrying on the work.

2. The area director having made satisfactory arrangement with one or two logical and high grade colleges, universities or technical schools in the district, will arrange to have appointed one professor or official in that school, through whom to carry on all future negotiations.

3. To arrange for representative pulp and paper men to address the various classes in the cooperating schools upon such subjects and at such intervals during the courses that there will be presented a well rounded picture of the industry, its requirements and its possibilities. Such addresses to be presented to men in those courses from which the industry may reasonably expect to draw its future supply of trained men.

4. While it is difficult for the average student to decide upon his future plan of action, yet he would now be given an early opportunity to consider the desirability of entering the pulp and paper industry. A census would then be made to determine what men were interested in doing summer work in the mills; and from these would be selected students who might be expected to show an aptitude for such work.

5. Meanwhile the director would make a canvas of all pulp and paper mills in his area to determine the number and kind of men they would place for two or three months each summer. Such men would be placed preferably in laboring positions, but with contacts either with the manager or technical man. They would receive the customary rate of pay and at the end of the summer would submit a report covering their experiences and summing up what they had learned. Likewise the mill would submit a report on the work the student had done and the impression he had left.

During each of his three summers, the student would either work in different departments of the same mill or in different mills, thereby obtaining familiarity with a variety of pulp and paper manufacturing operations.

By the time he is ready to graduate the student should have reached a fairly clear decision as to whether he wants to enter the industry; and the mills should know whether he is fitted for their work.

This is the plan.

Now, as to the accomplishments of the committee along the lines indicated. First, there have been constituted nine cooperating pulp and paper mill areas in the country, each having as its director a member of this committee. These men have already established contacts with schools in their areas, as noted:

Area No.	Director	States in Area	Cooperating Schools
1	T. F. Spear	Maine	U. of Maine
		Massachusetts	Mass. Inst. of Technology
2	P. D. Bray	Vermont	U. of Maine
		New Hampshire	
3	C. E. Libby	New York	N. Y. S. College of Forestry
4		Pennsylvania	.....
5	J. D. Rue	North Carolina	.....
		South Carolina	
		Virginia	
6	J. J. O'Connor	Ohio	Ohio State University
		West Virginia	
7	B. M. Thomas	Indiana	Purdue University
		Illinois	
8	H. L. Joachim	Michigan	U. of Michigan
9	H. G. Noyes	Wisconsin	U. of Wisconsin

Turning to the areas, we note briefly the work which has been done in each.

Area No. 1—Mills in this district have usually had their own arrangements with students but indications are that they will now work into this broader plan.

Area No. 2—The mills are now being canvassed for the coming summer and the first speaker will probably address the students next month.

Area No. 3—In New York State we find a well organized plan since the State College of Forestry requires of its students a minimum of six months work in a pulp or paper mill prior to graduation. The school places between 20 and 40 students each summer, but, since the mills in New York State do not absorb all these men, a number will go into adjoining states.

Area No. 4—A complete report is not yet available on this area.

Area No. 5—In this district one mill employs from 10 to 15 students each summer, placing them in various departments and bringing them together for weekly conferences. Another mill is interested in sending promising local boys to the University for training. Letters have been sent to the mills in this area and responses are just coming in.

Area No. 6—One company in this area has interviewed students in 12 universities throughout the country, in order to pick four men of a type suitable for its needs. As this company says, "We are not going to wait until the field has been picked over in the future."

Letters have been sent to the mills and many of the replies now coming in indicate a willingness to cooperate in these activities.

Area No. 7—A large proportion of the mills in this district are small and isolated and do not employ technical men. However, the Area Director has made progress in securing the cooperation and suggestions of the schools and expects to place a number of men this summer.

Area No. 8—Very excellent progress is reported in that the manufacturers have shown a fine cooperative spirit and the University of Michigan has entered into the program wholeheartedly. At least 20 men, and probably many more, will be placed this summer.

Area No. 9—Nearly 75 per cent of the mills approached have agreed to cooperate and it is believed that at least 30 men can be placed. The first address has already been given to students at the University and a second one is to follow shortly.

This brief summary indicates excellent progress in so short a

[1] Member TAPPI; Technical Director, Marathon Paper Mills, Rothschild, Wis.
[2] Chairman on Committee on Training for the Industry.

time. The coming summer will afford a working trial of the plan and will suggest modifications in certain areas.

There can be no reasonable doubt of the ultimate success of some such program as this. We are being backed by the progressive manufacturers represented in the American Paper and Pulp Association, and we have the hearty cooperation of the leading schools in the country. We are now relying on the whole-hearted efforts of TAPPI members to put this program into operation. It is too intimately associated with the successful future of our industry to fail. We must assimilate promising men into our ranks and we must "get them early" if we want to hold them.

Canada is pursuing the same kind of a plan and we shall watch with great interest the results of her efforts. She has seen the necessity for better assimilation of her trained men in industry and is entering into a vigorous campaign to keep these men from straying into other lines.

To the members of our TAPPI committee on "Training for the Industry" is due great credit for pushing this plan so vigorously for trial during the coming summer.

In the fall we shall report on progress and it will then be time to decide on methods for permanent handling of this vital and important program.

Report on Greaseproof Papers

By H. A. Smith,[1] Chairman

In regard to the work of the sub-committee for the development of an official test method for determining the degree of greaseproofness of different greaseproof papers, no formal report is possible at this time, due to the fact that cooperative check tests have not been made.

However, very helpful suggestions have been made by several sub-committee members, and a good deal of work has been done here, so that a method which I believe is suitable for submitting for check testing and approval can be formulated.

For general use in routine testing I believe "The Turpentine Penetration Test for Greaseproof Paper" as given in TAPPI Papers, Series VII, No. 1, June, 1924, p. 23; or as modified by Dr. Des Autels (he uses black colored turpentine and ground glass for observing the end point; instead of red colored turpentine and white paper, as in the original method), is very satisfactory on account of reproducibility of results, lack of troublesome cleaning up, etc. For an official method a more carefully controlled technique should be used such as Mr. F. T. Carson's modification. I would suggest the following:

The test should be made in full light, preferably before a window; at standard conditions of temperature and relative humidity.

At least ten uncreased pieces of greaseproof paper cut 3½ by 3½ inches are tested from each sample, and results averaged for the final test figure. These small sheets are prepared for testing by cementing on each one, one end of an open metal or glass cylinder 2½ inches in diameter by 1½ inches high. (Someone has suggested using 1½ inch lengths of 2½ inch iron pipe.) This can be done by slightly dipping one end in thick syrup such as "Karo" corn syrup or thick hot animal glue, and then placing the dipped end on the greaseproof sheet. Such a seal is impervious to turpentine. Then the greaseproof sheets with their metal cylinders (now like shallow cups with paper bottoms) are placed either on the ground side of a ground glass plate supported so that an adjustable mirror beneath it can be used to view the under sides of the test sheets through the ground glass; or on pieces of clean white paper. In either case the test liquid is poured into each "cup" to a previously placed mark 1½ centimeters from the bottom. In this way equal pressure of the liquid is secured on each test sheet. The test liquid is moisture free turpentine (dried over anhydrous calcium chloride) deeply colored with an oil soluble dye. ("Newport Oil Red B," made by Newport Chemical Co., Passaic, N. J., has been found excellent as it hardly stains greaseproof paper when in turpentine solution, so that it does not retard the end point; and also because it gives as an end point when an underlying white sheet is used, a red spot that is readily and surely distinguished from the minute black or brown spots often found in paper.)

When the ground glass is used, the under surfaces of the test sheets are constantly observed in the mirror to detect the first minute dark spot that appears on the ground glass, under each sheet. These are the respective end points and the time elapsed between pouring on the turpentine and observing the first visible penetration of any one sheet, is its greaseproof test. By averaging the greaseproof tests of all sheets of a sample that are tested, the greaseproof test of the sample is obtained. If paper is used as the underlying medium instead of ground glass, the end point is observed by frequently moving the samples from their normal positions and looking on the underlying paper for the earliest detectable red spot. This is used as above to determine the G. P. T. If the test runs for more than an hour the cylinders should be covered with watch glasses to prevent too great evaporation of turpentine.

The first penetration point is a definite end point, doing away with the personal equation and making it possible to give a numerical value to greaseproofness. Our experience in using the Turpentine Penetration Test for about five years; and for the past year, as a control method on each roll of greaseproof made is, that the use of this end point makes it possible for different testers to check each other reasonably well; and, more important, that the tests actually tally with the customers' findings as to the relative greaseproofness of papers in actual use.

I believe that the initial penetration time alone should be used as the Grease Proof Test. It has been suggested that the basis weight of the greaseproof paper should be used to arrive at a factorial greaseproof test. Careful study has failed to find any correspondence whatever between basis weight of paper and its greaseproofness even when made on the same machine, of the same furnish, etc., etc.

A little work has been done on the Oleic Acid Test as used by Dr. Knight at the Customs House in New York, and by R. C. Griffin of Arthur D. Little, Inc., of Cambridge, Mass. For Dr. Knight's use in determining whether an imported sheet is to be classed as greaseproof or non-greaseproof for purposes of levying duty it should be a very good test, but it seems to be too slow for general use in determining greaseproofness.

Enclosed are several small sheets of white paper showing end points actually obtained by the modified Turpentine Penetration Test when underlying paper is used, instead of ground glass. Note the small red dots in the penciled circles The appearance of such an end point is capable of definite timing, and with a small amount of practice is easily distinguishable, either on paper or ground glass.

The members of the sub-committee, to all of whom I am indebted, are:

Allen Abrams, Marathon Paper Mills Co., Rothschild, Wis.

F. T. Carson, Bureau of Standards, Washington, D. C.

G. F. DesAutels, Kalamazoo Vegetable Parchment Co., Kalamazoo, Mich.

R. C. Griffin, A. D. Little, Inc., Cambridge, Mass.

C. D. Lowry, Jr., Institute of American Meat Packers, Chicago, Ill.

P. F. Wehmer, Electrical Testing Laboratories, New York City.

[1] Member TAPPI; Chief Chemist, Hamersley Manufacturing Company, Garfield, N. J.

Use of Sodium Silicate in Paper Making*

By James G. Vail[1]

One characteristic of silicate solutions is their ability to form hard resistent jelly-like masses when they come in contact with substances able to combine with the alkali and set silica free. An example of this is the familiar method of preserving eggs by keeping them immersed in a dilute solution of silicate of soda. The lime in the egg shell causes the silica to deposit in the form of a very stiff, hard jelly which fills the pores of the shell. This jelly effects the preservation of the egg by preventing the passage of bacteria from the outside to the inside of the shell. The shell is naturally porous and the bacteria are the usual cause of decay. The gel effectively shuts them out as long as the eggs are kept under the solution and thus prevented from drying out. In order to obtain the best results, it is necessary to select that form of silicate and that degree of concentration which gives a gel of the texture required. Now silicate solutions differ in the amount of soda and silica which they contain and it does not follow that because one silicate gives exactly the desired results that the same will be true of every other. Let us then think of the name silicate of soda as a generic name including a group of materials which differ among themselves at least as much as the various kinds of starch or clay. Some of them are suited to the needs of the paper industry, while others have their place of usefulness in an entirely different field.

Hard Jellies from Silicate Solutions

Hard jellies are best obtained from silicate solutions with a relatively small quantity of soda, and the same process which is useful for preserving eggs is also a valuable means of hardening concrete. After a cement floor has well set it consists of a hard, finely porous structure comparable in several respects with the egg shell. The best concrete will gradually wear under the forces of abrasion incident to moving materials about a factory. Even foot traffic will often cause enough wear on the concrete to raise a dust which is a nuisance, for it damages machinery and paper as well as the floor. A dilute silicate solution containing a high proportion of silica will, when it is spread upon the dry, finished floor, be absorbed into the pores and deposit there a hard jelly which increases the resistance of concrete to abrasion. The denser the concrete the more dilute should be the solution. The idea is to get it to penetrate as fully as possible, and to repeat the treatment two or three times allowing the floor to dry between the applications until the pores are thoroughly saturated. Not only laboratory tests, but practical experience shows that this method invariably increases the ability of the concrete to withstand wear. Its porosity toward water or oils is also decreased. Test blocks of concrete rubbed with steel blocks, with sand continually fed to the rubbing surface, show many times as much wear on untreated portions as on those saturated with silicate. Similar results are secured by measuring the penetration caused by a sand blast under standard conditions and the advantage of silicate is clearly apparent for any age of concrete after the initial set. In practice this means that old floors as well as new may be successfully treated, provided only that they are free from grease which may interfere with the penetration of the silicate. On floors having the hardest service it is some times advisable to repeat the treatment annually. Freedom from dust, quite aside from the life of the floor, is an object worth some effort. Around a paper machine where the floor is continually wet, increased wear may be secured by saturating with a dilute silicate during down periods. The concrete should be dry when silicate is put on as otherwise the water in the pores will interfere with the entry of the silicate.

Patches on concrete floors will help to take firm hold of old work by undercutting, thoroughly cleaning the freshly exposed surfaces of old concrete and painting with silicate before putting the new work in place.

Silicate and Portland Cement

Silicate and Portland cement should not be integrally mixed before the setting, except in a few special cases. One of these is when a very quick set is required as in stopping a leak where the ultimate strength of the concrete is not a matter of first importance. Silicate greatly hastens the setting of Portland cement and is detrimental to its ultimate strength. Other mixtures in which silicate solutions and Portland cement are used are some of the quick setting formulae for placing acid resisting brick in sulfite pulp digesters. Here the formula usually requires the mixing of very small batches so that only a few brick are laid with one mixture. For this purpose a somewhat more alkaline silicate has been found to be most satisfactory.

Adhesive uses of silicate solutions are very many. The most important in connection with the paper industry are the making of corrugated and solid combined board for fibre shipping containers and for wall board. In the paper mill proper the capping of rolls and the sealing of packages containing cut sheets of paper, while they are not the most important operations of the mill, must, nevertheless, be done right or a great deal of dissatisfaction will result. Silicate is also used for splicing and does the work economically, though it must be said that the ideal material for this purpose would be one which is entirely free from water. The strength of silicate adhesives is enormously greater than the strength of paper. Silicate will adhesively unite surfaces to withstand a pull above five hundred pounds to the square inch. It does this economically, and has a great reserve for any use on paper, where fifty pounds to the square inch would give a good margin of safety. Silicate also has the advantage of being a mineral product incapable of becoming rancid or moldy.

An Important Characteristic

An important characteristic of silicate solutions is their ability to wet surfaces. This is one of the reasons they are used in laundries. The first step in washing is to thoroughly wet the fabrics to be cleansed, and silicate, even though dilute, is much more effective than water alone. It can even wet oily surfaces. Similarly in the beater the more quickly and thoroughly the pulp is penetrated by water, the more easily may the individual fibers be separated by mechanical means; the shorter may be the beating operation. Silicate can thus increase beater capacity.

The capacity of clay mixing equipment also can be increased by using small amounts of silicate. Such additions render clay suspensions so much more fluid that it is often possible to double the amount of clay carried by a given quantity of water.

Much can be said about silicate sizing of paper, and while a good deal remains to be learned, there are some points which have been made clear by experience and research of recent years, for they enable the paper maker to understand the means by which he may employ silicate solutions to obtain qualities which he needs in a particular sheet of paper. It has long been known that silicate is in many ways analogous to rosin size, but the analogy is not complete. Both silicate and rosin size are alkaline liquids in which soda is combined with a material of weakly acid nature. Both may be precipitated with alum, yielding materials retained in the paper, and in both cases the texture of the precipitate is affected by the conditions of precipitation, i. e., the amount of water present, the amount of alum used, and the relation of the silicate or rosin to the amount of pulp in the beater. No paper maker would expect to get a uniform distribution of rosin by mixing it with alum before it was well diluted in the beater. The same is true of silicate. Gritty non-uniform products result from precipitates

* Presented at meeting of Southeastern Division of the American Pulp and Paper Mill Superintendents Association, Lynchburg, Va., March 16, 1928.

[1] Technical Director, Philadelphia Quartz Co., Philadelphia, Pa.

formed in strong solutions, but with the amount of water ordinarily used in the beater, the soft precipitate settles slowly like a snow storm. Voluminous, flocculent masses are distributed among the fibres where they help to prevent the escape of the smallest fibres and, when rightly used, to improve the retention of clay or other fillers. There is no more risk of affecting the color of paper with silicate than with rosin size. With the proper manipulation of alum the most sensitive colors can be employed. The silicate precipitate hardens and loses water as the paper progresses through the machine. The effect is nearly always seen in a smoother surface and a harder sheet.

As an Aid to Hydration

The conditions of making paper and the objects sought are so various that it is difficult to make general statements. The purpose of this presentation is to indicate a method which has various uses according to the final result which is required. The makers of greaseproof and glassine paper will be specially interested in silicate as an aid to hydration. For this purpose the longest possible interval should be allowed between introducing the silicate and neutralizing it with alum. Silicate in alkaline condition accelerates hydration, but in every case a sufficient amount of alum should be used before the beater is dumped. On account of different waters, different fibers and other variations this cannot be specified absolutely to fit all cases. The modern method of measuring chemical pressure comparable to measuring voltage is an electric circuit, or pounds per square inch in a steam line is stated in a scale of acid and alkaline reaction which we call pH. The members run from one to fourteen. Seven represents the neutral point. The correct amount of alum is that which brings the pH to a point near 4.6, that is, definitely on the acid side. It has lately been found that the conditions most favorable to precipitates of silicate in water do not necessarily hold in the presence of pulp, but that somewhat more alum is required amounting in many cases to as much as fifty per cent of the weight of silicate. It has also been found that proportionately better results are obtained with more than minimum quantities of silicate, that is, a given effect will be greater per pound of silicate when silicate is used at a concentration of six per cent based on the fiber stock, than if only three per cent were used. We hope a little later to be in position to publish some of the data on which these general statements are based, but in the meantime, we are glad to discuss any individual cases and to apply the information we have as far as it goes. A great many paper mills will not wish to install the equipment necessary for measuring values on the pH scale electrically, but easily manipulated color standards are now to be had which give a close indication from the state of affairs in the beater, and their use will unquestionably enable the paper maker to obtain more from the use of silicate than would otherwise be likely.

Effects Are Cumulative

It is to be remembered that the effects of silicate are cumulative, for better precipitations are secured as the white waters are returned to the machine. Thus the effect may continue to improve for as much as six or seven hours after the addition of silicate has begun.

There are a few kinds of paper in which silicate offers no advantage. It must not be assumed that silicate will add much to water resistance or entirely replace rosin size, though improved water resistance has repeatedly been secured due to better retention of rosin with the aid of silicate. Silicate tends to give a hard smooth surface, to lay fuzz, and to increase the density and rattle of the sheet. It often improves the color due to better retention of the coloring substance and in many instances there is a perceptible gain in strength. Though it must not be assumed that silicate can take the place of an adequate fibre stock, instances are on record where a cheaper furnish has been made possible due to the qualities imparted by the use of silicate. Fnally the cost of silicate is usually very small because it carries water in combined form into the sheet as well as increases the retention of short fiber and ash, thus adding to the yield and producing a credit for increased material sold which reduces and sometimes entirely offsets the cost of chemicals.

In summary, the paper maker needs the right silicate, the appropriate amount of alum, a beating routine adapted to the requirements of his particular paper, With these in hand he will find silicate of soda a very useful servant and an instrument which will help him obtain results which in many cases would otherwise be beyond his reach.

Use of Suggestion Boxes

SPECIAL INQUIRY No. 98

A member writes:

"We are considering trying some scheme whereby the men in the mill will be encouraged to submit ideas which would tend to improve the operations of the plant and show the company a profit. We would pay some amount of money for the suggestions used.

"I would like to know if some mills are successful in operating such a plan and what regulations they have for governing it."

In replying to this inquiry please cover the following points:

1. State how suggestions are handled.
2. What is the basis of compensation?
3. Are greater awards given for exceptionally meritorious suggestions?
4. Are prizes other than money ever given?
5. Give illustrations of suggestions received.

This inquiry will be handled under the Service to Members plan and copies of the report containing all the replies, in blank, will be sent to all who contribute to the discussion.

Send answers to

R. G. Macdonald, Secretary, TAPPI,
18 East 41st street, New York, N. Y.

"Shiners" in High Finish Papers

SPECIAL INQUIRY No. 99

A member writes:

"Has anybody found a method of eliminating 'shiners' in high finish papers, particularly book papers? By 'shiners' we mean the small, transparent spots which are evidently made by small masses of pulp which, upon passing through the calenders, become glazed and transparent.

"We know that precautionary measures in screening the stock may be used.

"Is it possible that 'shiners' may be caused by the pounding of the balls of the stuff pump against the seat, and thereby forming small, hard masses of pulp?

"We have found by beating the pulp a little more thoroughly that the 'shiners' are made smaller, but not eliminated, and, of course, the finer the screen the smaller are the shiners, but still they are not eliminated, and we feel that both of these methods are remedies and do not eliminate the cause."

Answers to these questions, in blank, will be compiled in Special Report No. 99 and copies mailed to all who participate in the discussion. Send replies to

R. G. MACDONALD, Secretary, TAPPI,
18 East 41st Street, New York, N. Y.

TAPPI Notes

Richard T. Lang, general manager of the American Voith Contact Company, 280 Madison avenue, New York City, has been recalled to the J. M. Voith plant at Heidenheim, A/Brz in Wurtemberg, Germany, where he will take up the duties of chief engineer.

Allan Abrams, chairman of the Committee on Training for the Industry, recently addressed the students of the University of Wisconsin. These students are specializing in the study of chemistry and engineering.

Recent Additions to TAPPI Membership

R. M. Adams, General Manager, Amthor Testing Instrument Company, Brooklyn, N. Y.

E. M. Bassler, General Manager, D. J. Murray Manufacturing Company, Wausau, Wis.

A. S. Behrman, Chemical Director, International Filter Company, Chicago, Ill.

H. K. Berger, Draftsman, G. D. Jenssen Company, New York, N. Y.

R. M. Boehm, Engineer, Cornell Wood Products Company, Cornell, Wis.

G. S. Brazeau, Sales Engineer, Appleton Machine Company, Appleton, Wis.

A. E. Buchanan, Jr., Assistant Editor, Chemical and Metallurgical Engineering, New York, N. Y.

J. B. Calkin, Teaching Fellow, University of Maine, Orono, Me.

C. R. P. Cash, Soda Mill Superintendent, Cascade Paper Company, Steilacoom, Wash.

W. A. Chilson, Chemist, Parker-Young Company, Lincoln, N. H.

R. L. Eminger, Secretary, American Pulp and Paper Mill Superintendents Association, Miamisburg, Ohio.

W. N. Engler, Engineer, Western Union Telegraph Company, New York, N. Y.

W. W. Galloway, Manager and Treasurer, Hagar Straw Board & Paper Company, Cedarville, Ohio.

G. P. Graham, Chemist in charge of Technical Control Dept., Howard Smith Paper Mills, Ltd., Cornwall, Ont.

Fritz Grunwald, Chemist, Container Corporation of America, Chicago, Ill.

L. W. Heard, Chief Chemist, Ontonagon Fibre Company, Ontonagon, Mich.

G. L. M. Hellstrom, Managing Director and Vice President, Paper Machinery, Ltd., Montreal, P. Q.

C. T. Henderson, Vice President, Great Western Electro Chemical Company, San Francisco, Cal.

E. O. Houghton, Assistant Chemist, Fraser Companies, Ltd., Edmundston, N. B.

C. S. Huestis, United States Testing Company, New York, N. Y.

E. B. Johnson, Instructor in Chemistry, Cornell University, Ithaca, N. Y.

Grover Keeth, Chief Engineer, Marathon Paper Mills Company, Rothschild, Wis.

H. C. Kinne, Assistant Sales Manager, Bagley & Sewall Company, Watertown, N. Y.

A. E. Leighton, Plant Engineer, Cushnoc Paper Corporation, Augusta, Me.

C. E. Lindgren, Purchasing Agent, Cornell Wood Products Company, Cornell, Wis.

Ivar Lundbeck, Chief Chemist, Lee Paper Company, Vicksburg, Mich.

J. W. McCammon, Acting Manager, Charles Walmsley & Company (Canada), Ltd., Montreal, P. Q.

B. de B. Millidge, Mill Manager, Howard Smith Paper Mills, Ltd., Beauharnois, P. Q.

D. W. Newell, Assistant Superintendent, United Paperboard Company, Wabash, Ind.

F. W. Motschman, North Wilmington, Mass.

C. S. Nelson, Hallowell, Me.

G. E. Norton, Sales Engineer, Penberthy Injector Company, Detroit, Mich.

F. A. Oetken, Lurgi Gesellschaft, Frankfurt a/M., Germany.

C. M. Rhodes, Student, N. Y. S. College of Forestry, Syracuse, N. Y.

J. C. Schmidt, Colorist, E. I. du Pont de Nemours & Company, Inc., Philadelphia, Pa.

H. J. Sigwart, Chemist, Cherry River Paper Company, Richwood, W. Va.

G. L. Witham, Experimental Laboratory, Bogalusa Paper Company, Inc., Bogalusa, La.

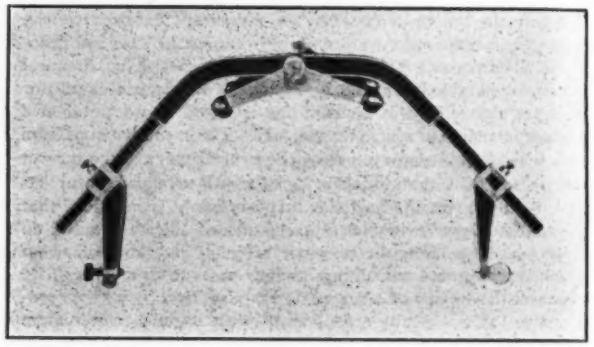
E. W. Woodhall, Chemist, Dixon Board Mills, Inc., Carthage, Ind.

New Type Roll Caliper

Paper mills that realize the importance of having their calender rolls extremely accurate will be interested to learn of the new Farrel micrometer roll caliper recently announced by the Farrel-Birmingham Company, Inc., of Ansonia, Conn.

The high precision, rapid setting and light weight combined with the ease of handling makes this an invaluable instrument for calipering rolls of any kind.

The saddle, made of aluminum alloy, is mounted on four hardened steel rollers. The cross bar has two arms extending down-



NEW MICROMETER ROLL CALIPER

ward on either side of the roll at a constant angle. A steel pintle with hardened centers mounted in hardened bushings on the saddle, supports the cross bar and allows it to pivot. The cross bar may be moved along the pintle and is held in any position by a clamping screw. Each angle on the cross bar is marked with quarter-inch marking showing the range of the caliper. On one angle is mounted the gauge arm and on the other the dial arm.

Just two adjustments are made when changing from one diameter roll to another as it is only necessary to move the gauge and dial arms to the required diameter on the scale. Any variation in the diameter of the roll is detected on the dial indicator as the caliper is moved along the face. The dial may be set at any angle that is most convenient for reading. There is no jumping of the indicator when calipering, as the saddle is carried on rollers, giving a smooth motion regardless of whether the roll is wet or dry.

Another interesting feature is the calipering of rolls to the very end of the face without reversing the instrument. The cross bar may be moved to any point on the pintle and the extreme positions bring the contact points of the dial beyond the center line of the rollers. The light weight, due to the majority of parts being made of aluminum alloy, allows an operator to caliper rolls with minimum effort. There are at present four sizes, taking rolls from 8 inches to 50 inches in diameter.

More Pulpwood From Nova Scotia

The pulpwood industry experienced a material expansion during 1927, according to Consul Gaylord Marsh, located at Sydney, Nova Scotia, shipments to the United States being greater by $285,000 than in the preceding year, an increase of about 60 per cent.

Section of the

COST ASSOCIATION OF THE PAPER INDUSTRY

Affiliated with

THE AMERICAN PAPER AND PULP ASSOCIATION

Edited by
THOS. J. BURKE, C. A., Sec.-Treas.

The Distribution of Selling Expenses*

PRESIDENT KNOTT: The next item on the program is the "Distribution of Selling Expenses." This is one of the few phases of accounting where we are at the present time u pagainst a stone wall. We fairly well take care of all manufacturing expenses, all expenses up to the mill door. But very few mills, I am quite sure, can say that they have any definite plan for the distribution of administrative and selling expenses. There has been a lot of literature published within the last two years, a lot of constructive work done, on plans and methods of distributing these classes of expenses.

It gives me great pleasure to introduce to you today Mr. T. D. Nevins, Vice-President of Miller, Franklin and Bassett & Co., Inc., New York City, who have a thoroughly workable plan on the distribution of selling expenses. Mr. Nevins.

T. D. NEVINS: I owe you gentlemen an apology, for just getting under the wire, and causing Mr. Burke all these extraordinary exertions. The facts are, that some weeks ago Mr. Burke came down to see me with the idea of getting down here, not myself, but a much more experienced and able man than I—Mr. Bassett, the head of our concern. But unfortunately, for present purposes, Mr. Bassett was in Florida, and not expected back for quite a while. Mr. Burke and I got to talking and I was telling him that our recent experience in the paper game has been rather of the staple type—useful, but it does not make a very inspirational subject for a "speech." Then I happened to tell him about some work which we had done out in the West for a concern that makes underwear, in the development of their selling expense, and its distribution according to a theory that is comparatively unusual, and has been giving excellent results. Mr. Burke thought this would interest you people. We have a report on this underwear work, and yesterday I went through this report and marked out certain pages that I would read to you and make the center of my argument this morning. The young lady in the office put it back in the library and locked it up. All of our records and reports are bound in gray and given a consecutive chronological number. They stand upon a shelf that runs from one end of the office to the other, and they look about as much alike as the various units in the contents of a can of green peas. All the spare time I had before I was actually due here I spent searching for the key to this file system, and I was not able to find it. So I am unable to bring the underwear report to you this morning. Which I think is not entirely a misfortune, because after all the field is quite far from your own, and all the detail would be strange and therefore probably lacking in interest.

However, I can easily (and this is what I propose to do), give you the central idea behind this new method, which I believe is applicable in the paper industry and all industries.

What "Cost" Means

Some fellow, trying to be clever, once said, that words are the most effective means of obscuring ideas and concealing thoughts which could possibly be imagined. As an illustration of the truth of that, I submit to you the word "cost." If there is any one word in the whole world which means all things to all men, it is the word "cost." I never have in my experience met a man who didn't think he knew all about costs; yet, the ideas connoted by the word often have no measure of coincidence whatever.

It is assumed that we are a sophisticated body here together and know exactly what we mean when we talk about cost; but I really suspect that there may be those among us whose viewpoints would vary. That is the unfortunate part about it. Cost-finding is not an exact science. It is a matter of expediency. But I am getting ahead of my subject.

There was a time, not so very long ago, when costs as we now generally understand them had not been discovered. The practice was, at the end of the year to find out how much money had been spent and divide that by everything that had been made during the year, whence a certain idea was had which was called "cost." The progress from those days of average cost on a year's production, to our present conception of cost analysis and standard cost and budgeting, represents an enormous span, I believe you will agree, that we can see that progress reflected in the increased efficiency, (a good word in this instance) of manufacture, which is done more economically and ably today than it was back in the old days of average cost. One of the notable factors in improving production practice has been a study of the costs which reflect the manner of production, and which gave an incentive to reduce cost.

Now although we have made great progress, where production is concerned, selling costs are still pretty much back at the 1885 stage. Take a certain woolen mill I could name. They will figure out how much they have spent for selling during the year and divide it by the total amount of sales. They will call the result "selling expense," that being the average of what they have spent to sell. This amounts to laying a tax on the sales of a certain flat amount, which provides revenue they can spend in any way they choose.

Progress in Production Methods

The progress in production methods has come from finding where the money went, and what results were achieved for each detailed expenditure. When in selling we provide the sales department with a lot of money realized by a few profitable sales,

* Address by T. D. Nevins of Miller, Franklin & Bassett, given before Cost Association of the Paper Industry, at Waldorf-Astoria Hotel, New York City, February 22, 1928.

and enable them with this money to do anything they choose, we have our experience in production as a fair analogy for the belief that a good deal of money is going to waste.

In production we have a fairly definite task. It is hardly conceivable for a man in the plant to do his work without some result. If a paper machine runs we are bound to get a certain amount of paper; but the sales department may run and we may get no sales at all. This is because selling is an intangible thing. One man can sell and another man cannot sell, and it may be difficult to tell the difference between the one man and the other, which gives the man who can sell an enormous advantage in surrounding his ability with a lot of hokus-pokus, like the medicine men did in savage tribes. He makes it appear a magic gift which is not susceptible of control, therefore that he should be left alone; and because selling is so important, he has largely been left alone.

This has not done a great deal of harm in the quarter century which is just drawing to a close, for the reason that the country industrially was just flowering out in that interval. Immigration was unlimited, and population grew by leaps and bounds. The nation was growing richer, and advertising as we know it today was coming into being. All markets were reaching out. Just as was the case in the cutting of timber, just as is still the case in the mining of coal, it was assumed that our market resources were unlimited and that we could continue indefinitely to expand our sales, never reaching the limit.

Under such circumstances it did not particularly matter how inefficient our sales effort was, because the sales to be had were sufficient in number and quantity to return a profit on manufacturing without any great supervision. That day, every one will now concede, has drawn to a close. There has not been a time in industrial history when there has been more business done, and less profit made from the doing of it, than during the year just closed. The reason is that we have pushed our markets with advertising and with sales pressure to the point where we are approaching the wall; or if not, we are getting out to where the law of diminishing returns is pushing back against us, and the markets tend to become demoralized by this counter pressure which forces prices down.

Idea of Bigness Must Be Discarded

For the future, a concern that prospers is going to get a little bit away from what has become the characteristic American idea; which is the idea of mere size, the idea that the bigger we are the better we are. I think it probable that if all the rest of the world were to go out of business so that the factories of America could produce the entire output for the world, there would still be some complaint that mills could not run at one hundred per cent capacity. This means that for the future the idea of growing bigger and bigger has got to be discarded, in favor of *the idea of pursuing profit more and more intelligently.*

It is a very familiar circumstance to you, no doubt, that within the last few years of increasing pressure, there has been much debate about the wisdom of taking business below normal cost. This is really an effort to justify what everybody wants to do; but if everybody does it, obviously it cannot be profitable to anyone. I don't know exactly how it first came into prominence, but I think probably it was Henry Ford who first crystallized an idea that had been growing up in everyone's mind, and gave it publicity—the idea of reducing prices to a point below cost to bring volume, figuring that by increasing volume he could reduce overhead until it would come within his price, and leave a profit. He did that and got away with it, and got a lot of publicity, and it became a popular idea. The absurdities that it is apt to lead to, ought to be today everywhere recognized.

For example, we have a client in Providence, Rhode Island, who makes a certain product, and another client in Baltimore, who makes the same product. They met in a group like this one, and a lot of talk was had about what costs should amount to. One fine morning the Rhode Island man discovered the Baltimore man was laying his product down in the Providence market for a figure very little above the cost of material and labor. He called him on the telephone and said, "What is this I hear? What is the idea of sending thing-a-ma-jig up here to Providence and selling them for a figure you know you cannot make a profit on?" The Baltimore man said, "Well, Providence is not my natural territory. Providence is outside of my territory and anything I can sell in Providence, provided I get anything of my overhead back at all, is worth selling." The Providence man said, "This is going to be easy. Things equal to the same thing are equal to each other. I will send a man to Baltimore and see if I cannot get some of my overhead back on the Baltimore market, and I may later be able to swap back to you my losing Baltimore business for your losing Providence business." That is a familiar situation in production.

Selling Costs as an Average

The same thing is apt to happen in the cost of selling, yet never be detected under our present methods of handling selling costs as an average. Let us consider how it might work out. A man can figure fairly closely on whether he gets back his cost of production, because he knows what it is. But he does not know the cost to sell. All he knows is, that he has a tax of such and such a per cent and that it yields revenue with which he can do all sorts of things, wise and unwise. Here is an instance of unwisdom. We had a client in Michigan, large, but not one of the largest in the country in his line. The sales manager wanted to climb into the first class. His idea was to go out and build an empire. It happened that he got enough revenue out of the tax on the business they already had, to finance his ambitions. He sent salesmen to the highways and byways, and they sold because you can sell anything to anybody if you work hard enough and spend enough money to do it. When we looked into these marginal sales we found that you could draw a circle through the middle of them, and outside that circle the accounts averaged one hundred dollars a year gross; yet the cost of opening these new accounts ran about eight hundred and thirty dollars a piece as an average. Hence the more business he got the more money he lost his concern, yet he did it without increasing the average selling expense, except by a quarter of one per cent.

Another case in point: In an Eastern city there was a jobber of dry goods. Dry goods jobbers are now finding more or less difficulty growing out of the fact that so many sales are made direct, manufacturer to retailer. Our man was still figuring his average selling per cent, and struggling hard to hold onto the volume of business left to him. We were able to set apart a certain share of his sales and prove to him that those sales cost him eighty per cent on the gross, where he had a spread of perhaps an average fifteen per cent. The more he sold the more money he lost.

The point I am leading to is this: It is not safe now for selling, any more than it was for production years ago, to give people a blanket sum of money and let them spend it, because the law of diminishing returns, as markets are today, is always around the cornor to swallow just as many dollars as your salesmen wants to pour down its throat.

On the other hand you can take the salesman's effort and break it down. This may show results strikingly at variance with previous ideas, and you may find the sales manager ready to fight like a steer to prove that everything he has been doing is wise. You can often demonstrate to him much that is not wise—if you make your basis for distributing selling expense the unit of a salesman's effort.

The Salesman's Call

The unit which I have in mind, and which we used in the case that I talked with Mr. Burke about, is the salesman's call.

People like the Fuller Brush Company who sell by direct canvassing with a large force, always control selling cost through the cost per call. They try to increase their sales, and economy of sales by studies that will increase the number of calls, hence cut

the cost per call in every way possible; because by doing so, with the sales expectancy of a call constant, they can increase sales. The salesmen's effort is expended through his call, therefore, your salesman's call is the proper unit to use as a basis for spreading selling expense; because you will thus contrast the easily had business with the business which requires a great number of calls and so may cost too much.

Let me paint for you the ideal sales condition: If you had perfect salesmen, every one would sell as much as every other one, by the definition of perfection. Therefore, if one salesman does not sell as much as another, he falls short of the merit the other salesman has. Now, if we assume all of our salesmen to be perfect, meaning that their performances will all be equal, we can then show up any imperfections by distributing expense uniformly between salesmen and uniformity between calls, because the same argument holds as to the uniformly productive calls. If each salesman is perfect, each call would be perfect, and all of the calls would be equally effective. Then the way to show up the calls which are not effective, and the salesmen who are not effective, is to charge them all on the same call basis, in order that the man who makes a poor return may be effectively contrasted with the man whose return, measured in terms of his effort, is good.

One of the tricks we have in our trade (we are all cost accountants here together) is to take our facts and turn them around so that the sharp edge sticks out; in order that executives may strike their shins against the sharp edge and notice the facts, and be governed accordingly. That is just what you do when you cost your selling effort upon a per call basis. Your salesman may say, "I called on John Jones in the morning and got a four thousand dollar order from him, and that paid for my day, so I had the afternoon to spare." That would be one way to look at it. If you should want to consider that he made enough money in the morning to loaf all the afternoon that would be fair enough, but you don't want to do that. You want his afternoon to be just as productive as his morning, and you want to show up the contrast in the two, so that he cannot sit back on his laurels as a result of a good morning's work.

This is the reason why, although there must admittedly be a number of calls which will be unprofitable, it is desirable to emphasize the unprofitable aspect and show a premium on the calls wherein business was easily obtained.

Applying the Principle

Thus far I have spoken of an ideal situation. When we actually get down to apply the principle we must make some qualifications.

If you have a good customer who comes to you year after year, and it only takes half an hour to fill out his order when you see him, you might charge that as one call. The cost per call would tend to disappear in comparison with the amount of the order in this case. It might be said that if the cost per call tends to disappear you have the most logical basis in the world for quantity discount to the buyer who saves you selling expenses. Time was when we had two clearly cut divisions of business, wholesale and retail. The only logical reason for comparative wholesale and retail prices was that it cost less per dollar for wholesale selling than for retail selling. Wholesale selling today is taking on something of retail characteristics. Trade Discounts should be accurately calculated in proportion to the selling expenses saved. Per call distribution gives the key.

We have to take some cognizance of the fact that it is worth while to make calls which bring no return. The way we ordinarily do that is this: We divide the established customers into classes in accordance with what they did in the preceding year. Then we set up another classification for new accounts, which we seek through promotional calls. There must be a certain amount of promotional calling. We set the forlorn hope calls in a class by themselves. We set a standard cost per call that we seek to realize in each respective classification, on the basis of what the business is worth, to enable us to arrive at the point—and this is the whole idea behind my discussion—beyond which it is not profitable for the salesman to expend further effort. If the business has more salesmen than are necessary for profitable effort, then those salesmen should be dispensed with, or else they should be replaced with salesmen who can bring the cost per call, which is the unit of salesmen's effort, to a profitable and sound business basis.

I thank you. (Applause.)

Discussion

PRESIDENT KNOTT: I am sure, Mr. Nevins, we appreciate very much your coming over to us and giving us your fine talk. I believe you will be willing to answer questions which anyone may care to raise in connection with this phase of cost accounting.

MR. BURKE: What did you do about territories? The value of different territories varies in the selling field, and I wondered how you took cognizance of this in setting up the quotas for salesmen. Expenses may be much higher in one district, say, in the Middle West, where the population is less per square mile. How did you take cognizance of that?

MR. NEVINS: As between territories, we make a division similar to the one indicated as between classes of customers. That is to say, we must assemble our territories on the basis of comparative difficulty of selling in them, and establish a normal expectant cost for business in the territory. No matter how cheaply business may be had in a congested territory there will be a limiting cost there. There will be a limiting cost also in the high cost territories. We will want to find the limiting cost in each case, which will require a different standard based on what the business is worth to us. In the high class territories we can get a little more profit. That is the general idea.

MEMBER: I would like to ask Mr. Nevins this: In the case of orders coming through the mail, which do not require any definite call on the customer, what basis of selling would you put business of that nature on?

MR. NEVINS: To answer that question in a general way, which is the only way such questions can be answered, I would say that if the company considered the sales belonged to it, there would be a division of "house sales" to handle them direct without giving credit to any salesman. On the other hand, if the salesman travels through his territory and makes calls which later result in orders, though they do not come through him at all, he should receive due credit. The large manufacturers of lingerie suggest to their best customers, that they carry only three days' inventory, themselves undertaking to supply for say the third day, the exhaustion of the first day. In other words, they will completely hold the bag for the retailer. In such a case, the sales or orders come regularly to the company, but the salesman must nevertheless call to hold the business.

Government Business and Selling Expense

MR. BURKE: How about government business and selling expense? In estimating on a contract for government business, would you say that the mill should include any amount for selling expense?

MR. NEVENS: There would be two answers to that. One hinges on, what are the other mills going to do? It is such an obvious opportunity to ignore selling expense that probably it would be entirely ignored, though there would be a certain amount of expense chargeable.

MR. BURKE: And yet if that business is considered when figuring selling expense percentages annually they will get a lower percentage than they should.

MR. NEVINS: Of course they do.

MEMBER: How would you manage selling expense in companies where the sales manager probably would handle a few big accounts, and practically all the selling is done through jobbers?

MR. NEVINS: If the jobber is entirely outside of the control of the company, and there is an agreement with him whereby he gets a certain flat percentage for everything he sells, then that is the cost to sell, so far as the manufacturer is concerned. The

only thing that can be done is to show the jobber how his selling situation is precisely the same as the selling situation would be for the manufacturer; and the way for him to figure his cost and to make the maximum return out of the yield of this flat percentage is to limit the unprofitable efforts of his salesmen. Does that answer your question?

MEMBER: Not exactly. Because in such a case you have not only a commission paid to the jobber, but there might be one sales manager who does a lot of promotional work and that work is apt to be quite expensive; and in addition, the company may advertise the products. There is apt to be sometimes considerable selling expense although the company itself does not do the selling. Now the question is how to distribute the selling expense and the given administrative expense properly over the products of the company.

MR. NEVINS: I had rather leave administrative expense out of it because the argument I advance does not apply to administrative expense, but only to selling expense. All the indirect expense of selling including advertising, is a burden on selling. If a concern has a selling organization that does not sell directly but only promotes, there is very little beyond a central idea in what I have said to apply to such a company. The central idea of not carrying such a charge as a flat overhead, but of trying to put it where it belongs, is about the only thing you could carry over.

MR. BURKE: In other words, could this sales manager state definitely the jobbers on which it was necessary for him to call regularly, in order to line up their business? Does he call on all of them?

MEMBER: He calls on them.

MR. BURKE: The question of the salesman's effort and selling expense is what we really had in mind when we talked the matter over.

MEMBER: I suppose really those expenses should be prorated over the entire production.

MR. NEVINS: Maybe they should and maybe they shouldn't. Consider that the sales organization closes now one thing and then another thing. It touches here and touches there, and if we keep a record of the effect of the various things it touches in relation to the duration of the touch, so to speak, we learn something about how effective it is.

MEMBER: It is more or less accidental. You could not charge one type of product with the effort he had to put on it because he might not have to do it again, and he might have to touch on another type of product next year.

MR. NEVINS: We must not reduce any argument to absurdity, and we might do that with my argument if we carry it to too great lengths.

So far as advertising is concerned, it has various uses and various avenues of effectiveness which will determine whether it would come under the argument represented by my first remarks, or the reasoning connected with the point this gentleman just made. We may have advertising which has for its general purpose preparing the way for the salesman. If advertising is of a local character the general custom is, to charge it against the territories, in which case it would get to the sales on a cost per call basis. We sow the seed when we advertise and the salesman calls to reap the harvest. Therefore, the measure of his success in reaping is something of a measure of the effectiveness of the advertising. Does that bear on these points?

MR. BURKE: I think so. Thank you, Mr. Nevins.

General Question of Advertising

MR. NEVINS: The general question of advertising is one of the most vexed ones in the cost field. I am inclined to think that after cost accountants have been working on sales for a few years, perhaps ten or fifteen, and know more about how to sell economically, we will be smart enough to be able to tell a little more about advertising than we can now.

MR. BURKE: When you go back about ten years and think of the progress that has been made in production costs in that time, when you think that back there historical costs were all that could be done, and that now we have budget systems and standard cost systems, it is very hopeful for the distribution of selling expenses; for, although it is very difficult, a way can and will be found, because they are increasing out of all proportion to production costs, and something will have to be done in order to cut down the increasing selling expense, so as to widen the profit margin.

MEMBER: I would like to ask how many companies are splitting their selling expense?

MR. NEVINS: We have made five installations. That is, we have found five people who were willing to go ahead with it, and they are all delighted with the results. We have tried to persuade perhaps a dozen more, without success. These new ideas take more or less slowly, and the sales manager is apt to go up in the air when you first spring it on him.

PRESIDENT KNOTT: If there are no more questions we will now adjourn.

A hearty vote of thanks was given Mr. Nevins, for his kindness in addressing convention.

International Introduces Adirondack Bond

The formal introduction to the paper market of Adirondack Bond and Adirondack Ledger signalizes what the International Paper Company regards as an important step in the development of its policy of expansion and diversification of its paper products. Adirondack Bond adds to the Company's list of products a high grade, tub sized and water marked sulphite sheet, comparable to any other bond of its type and price class in the market.

The first steps looking toward the production of Adirondack Bond were taken in 1926. For more than a year experiments were conducted at the mill, under guidance of experts, and exhaustive tests were made at the company's Bureau of Tests to produce a bond that would have the color, surface, strength, folding and other quailties required by the most critical printer, lithographer or consumer.

The paper is being introduced with full realization of the peculiarly exacting quality and price demands required to meet the strong competition it will encounter in the most important bond field. The company owns many thousands of acres of spruce timberland in the Adirondacks, and thus is assured uniformity of product. The mill is also in the heart of the Adirondacks.

These papers will be sold through authorized distributors in the principal cities in the country. Appointments thus far made are as follows: Atlantic Paper Company, Philadelphia, Pa.; Barton, Duer & Koch Paper Company, Baltimore and Washington; Harris & Paul Paper Company, New York City; Seymour Company, Inc., New York City; W. H. Smith Paper Corporation, Albany, N. Y.; Walker-Goulard-Plehn Company, Inc., New York City; Whiting & Cook, Inc., Chicago, Ill.

Loomis Talc Corp. Increases Stock

ALBANY, N. Y., March 12, 1928.—The W. H. Loomis Talc Corp., of Gouverneur, has filed with the Department of State papers authorizing an increase in its capitalization. The notice was filed through Purcell, Cullen & Pitcher, attorneys of Watertown. Provision is made for increasing the stock from 8,380 to 17,380 shares, the increase being in the common stock which will hereafter consist of 16,000 shares of no par value. The preferred stock remains the same consisting of 1,380 shares having a par value of $100 each.

Newport and Acme Wood Rosin Sold As FF

For the benefit of all those interested in knowing the specific grade of Newport and Acme Wood Rosin, the General Naval Stores Company announces that these brands are being designated and sold as U. S. Standard FF Grade in conformity with the latest ruling of the U. S. Department of Agriculture, effective April 1, 1928, and which stipulation is made mandatory by the Naval Stores Act approved March 3, 1923.

GDC

If you plan to take up
the
Manufacture of

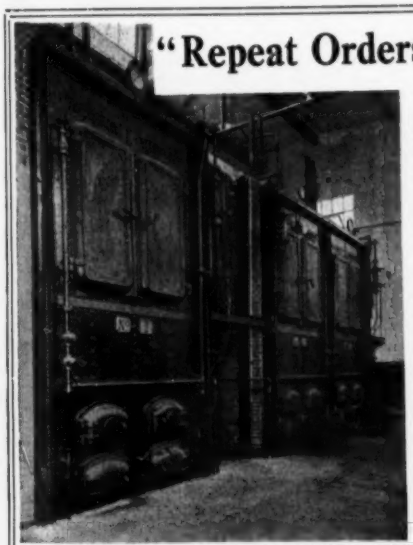
New Paper Specialties

or if you are confronted with color problems of any kind, such as fastness to light, fastness to alkali, two-sidedness, please consult our newly equipped laboratories and our experienced staff.

230 Fifth Avenue
NEW YORK

GENERAL DYESTUFF CORPORATION

"Repeat Orders Count"



Over 30 years ago Coatesville Boilers were installed in the old power plant of this firm,—last year when they built a new plant, they again installed Coatesvilles thus clearly indicating their complete satisfaction.

This is but "one instance" of — "once a Coatesville Boiler, always a Coatesville Boiler."

"THERE'S OVER 40 YEARS EXPERIENCE BEHIND COATESVILLE PRODUCTS."
Ask for Literature.

COATESVILLE BOILER WORKS

Boilers - Tanks - Steel Plate Work

Main Office and Works—COATESVILLE, PA.

Philadelphia 111 S. 15th St. | New York 30 Church St. | Newark, N. J. 60 Park Place | Boston 141 Milk St.
Pittsburgh: Union Trust Bldg. | Baltimore: Lexington Bldg.

SOLVAY PRODUCTS

Soda Ash

Caustic Soda

Liquid Chlorine

Contract or Spot Delivery

In tank cars and multiple unit cars.

Write for Prices

SOLVAY SALES CORPORATION

Alkalies and Chemical Products Manufactured by The Solvay Process Company

40 Rector Street New York

Boston Syracuse Chicago Indianapolis Cleveland
Cincinnati Pittsburgh Detroit Philadelphia
Kansas City St. Louis Atlanta

Trade Mark Departments

CONDUCTED BY NATIONAL TRADE-MARK CO., WASHINGTON, D. C.

The following are trade mark applications pertinent to the paper field pending in the United States Patent Office, which have been passed for publication and are in line for early registration unless opposition is filed promptly. For further information address National Trade Mark Company, Barrister Bldg. Washington, D. C., trade-mark specialists. As an additional service feature to its readers, PAPER TRADE JOURNAL gladly offers to them an advance search free of charge on any mark they may contemplate adopting or registering.

BUYASWOVEN—No. 232,022. McLaurin-Jones Company, Brookfield, Mass. For gummed box stays and sealing strips.

CENTAUR—No. 258,731. Cromwell Paper Company, Chicago. For tympan paper.

4 IN 1—No. 259,123. B. E. Lawrence & Co., Inc., Chicago, Ill. For calendar pads.

ADWRAP—No. 259,372. Pacific Northwest Paper Mills, Inc., Portland, Ore. For wrapping paper.

MICMAC—No. 259,408. Hollingsworth & Whitney Company, Boston, Mass. For writing and wrapping paper.

QUALIFIER—No. 259,751. The Western Paper Goods Company, Cincinnati, Ohio. For mailing envelopes.

SIGMA NU—No. 251,103. Sigma Nu Fraternity, Indianapolis, Ind. For writing paper and envelopes, memorandum blanks, and printed blank forms.

TRADE-MARK CONSISTING OF A GREEN CIRCLE ON ONE SIDE OF AN ERASER—No. 256,704. American Lead Pencil Company, New York City. For typewriter erasers.

ARGONAUT—No. 259,207. Holyoke Card & Paper Co., Springfield, Mass. For writing and printing paper.

VETERAN—No. 259,865. The New York-New England Company, Holyoke, Mass. For writing and printing papers, ledger, record, vellum, envelope, text, book, coated, and cover papers.

SCUTAN—No. 249,677. The Scutan Company, Dover, Del. For water and weather proof paper.

THE MILLER—No. 255,816. Miller Paper Company, Inc., Syracuse, N. Y. For writing tablets, writing books, and blank books.

PROTECTOID—No. 256,879. Neff & Smith, Inc., Easton, Pa. For safety paper.

PROTECTOID—No. 256,878. Neff & Smith, Inc., Easton, Pa. For safety paper.

WHITE DIAMOND—No. 257,230. Fred Rentz Paper Company, Chicago. For greaseproof and waterproof wrapping paper.

THY BEN—No. 257,822. Thybony & Bengtson, Chicago. For wall paper.

WRAPPINGLY SPEAKING ALWAYS ON THE JUMP with picture of a grey hound.—No. 258,119. Herbert J. Grey, New York City. For wrapping paper, tissue paper, paper towels, toilet paper, waterproof paper, blotting paper, etc.

DANDY—No. 258,276. Paramount Specialty Company, Springfield, Mass. For paper napkins.

SWORD—No. 258,299. George W. Simmons Corp., New York City. For toilet paper.

FAIRCOTE—No. 259,787. The Albermarle Paper Manufacturing Company, Richmond, Va. For blotting paper.

PORTO—No. 260,256. Brooks & Porter, New York City. For writing pads, calendar pads, and holders for same.

OWP—No. 260,403. The Ohio Wax Paper Company, Columbus, Ohio. For wrapping paper.

SUPERCORE—No. 260,599. Tubbs Cordage Company, San Francisco, Cal. For manila rope.

Upper Falls Mill Resumes Operations

[FROM OUR REGULAR CORRESPONDENT]

TICONDEROGA, N. Y., March 5, 1928.—The Upper Falls Mill of the International Paper Company, which has been closed down for more than a year, has resumed operations in part. One paper machine was started up this week after being rebuilt and is now running on book paper. It is said that within a short time the entire plant may be in operation. The plant has three machines and prior to the shut down the product was news print. The two remaining machines, when the necessary alterations are completed, will be put in operation also on book paper. The mill was closed down in February of last year, throwing out of employment 190 workers. Since then the plant has been overhauled and numerous alterations made to buildings and equipment.

The starting of the Ticonderoga mill on book paper is said to be another step in the plans of the International Paper Company for converting its New York State mills to products other than news print. The Fort Edward mill is well on the way to becoming a book mill with three machines now running and the others almost ready to be started. The South Glens Falls plant, formerly a news print mill, is now making artificial cotton or "Veldown."

The Hudson River Mill at Corinth, formerly regarded as one of the largest news print paper mills in the world and making news print since its establishment, is also to be changed over to book paper, according to officials of the mill. Alterations to plant and equipment at Corinth will cost approximately $250,000, it is estimated. Five machines have already been taken from news print and will be rebuilt to make book paper.

Dedicate Addition To Boys Club

[FROM OUR REGULAR CORRESPONDENT]

PITTSFIELD, Mass., March 20, 1928.—The new addition to the Pittsfield Boys Club, costing $170,000 and donated by Z. Marshall Crane of Dalton, son of Zenas Crane, founder of the club and a pioneer paper manufacturer, was dedicated Friday night with an elaborate program.

Mr. Crane who has been a director of the club since 1905 offered a year ago last January to give an addition which should contain a swimming pool and auditorium. The club plant now, thanks to his generosity, is one of the best in the country.

Mr. Crane also gave an inspirational mural painting by F. Luis Mora of Kent, Conn., and another gift was a painting of the late Zenas Crane given by his widow with the following inscription:

"Zenas Crane. 1840-1917. Citizen of Dalton. Papermaker. Public Benefactor. Friend of and believer in the Boy. Founder of the Boys Club of Pittsfield. Donor of the Building erected in 1906 and Gymnasium added 1910. These Gifts He Liberally Endowed.

Canadian Paperboard Co. Expands

The erection of the Canadian Paperboard Company's new plant on the waterfront in Toronto, Ont., is being financed from the liquid assets of the company; ultimately it seems probable that the company may undertake new financing to reimburse itself in part for these expenditures. It is anticipated that the new mill will begin to operate about the middle of the coming summer. Its daily output will run to between 75 and 100 tons. Thus by the end of the current year, the productive capacity of the plants will be increased from 125 tons daily to a maximum of 225 tons—a feature of the company that has a decided bearing on its earning power. At the present time three modern paper board mills are operated, one at Montreal, one at Campbellford and one at Frankford, Ont. In addition the Quinte and Trent Valley Power, a subsidiary, supplies low cost power to the two plants in Ontario.

Cutting Costs at Newsprint Mills

The necessity of reducing production at a number of the Canadian news print mills that are included in the so-called pooling arrangement, has also resulted in the operating costs of the plants being materially reduced. In the case of the Spanish River Pulp and Paper Mills, Ltd., it is learned that on an operating basis of 80 per cent of capacity, actual earnings are very close to what they were when the company was producing at a rate of 100 per cent. It is felt that with a return to more normal conditions the ratio of new profits on this account is likely to be very much greater than has ever been shown by the company. From now on it is believed the general market for news print is likely to exhibit much firmer conditions than was the case last year.

ALPHA FIBRE

Uniform Quality

Alpha takes the place of most grades of rags in the making of fine papers. Its absolute regularity and greater purity maintain your high standards.

Brown Company
PORTLAND, MAINE.

ENGINEERS

Power plants—additions—complete paper mill projects

ONE great organization—a specialist in paper mill engineering and construction—designs, builds, rebuilds, reports, appraises, for many of the most important concerns in the paper industry. Plans, price, construction work, delivery date, owner's satisfaction, all guaranteed.

Ferguson customers include:

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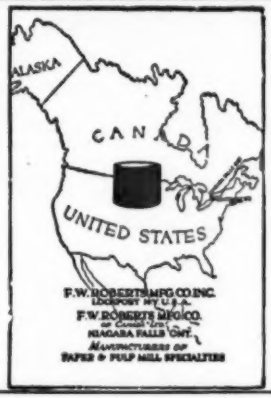

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C.K. WILLIAMS & CO.
ANCHOR BRAND
DRY COLORS AND FILLERS
EASTON, PA. U.S.A.

Red, Brown, Yellow } Oxides

Talc
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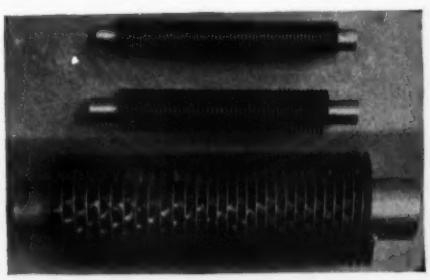
Specify

KRADIAFIN TUBES

for air-heating and air-cooling units

They have 6 to 10 times as much surface as plain tubes of same size and their use insures greater capacities with fewer tubes.
½" to 6"—High or low pressure—Lengths up to 15 feet
Plain or flanged ends—With or without headers
Quantity Production



SCHUTTE & KOERTING Co. 1255 N. 12th Street PHILADELPHIA, PA.

Imports of Paper and Paper Stock

NEW YORK, BOSTON, PHILADELPHIA AND OTHER PORTS

NEW YORK IMPORTS

WEEK ENDING MARCH 17, 1928

SUMMARY

Cigarette paper .....715 cs.
Wall paper .....45 bls.
Paper hangings .....22 bls., 14 cs.
Painted paper .....7 cs.
News print .....1,804 rolls
Printing paper .....2 bls., 38 rolls, 98 cs.
Packing paper .....16 cs.
Writing paper .....5 cs.
Drawing paper .....58 cs.
Note paper .....1 cs.
Filter paper .....98 cs.
Surface coated paper .....130 cs.
Silk paper .....25 cs.
Decalcomania paper .....19 cs.
Tissue paper .....13 cs.
Grease proof paper .....8 cs.
Glazed press paper .....3 cs.
Ceramic paper .....4 cs.
Envelopes .....2 cs.
Straw board .....228 rolls, 755 cs.
Miscellaneous paper
21 pkgs., 689 rolls, 41 bls., 102 cs.

CIGARETTE PAPER

British American Tobacco Co., Baltic, Liverpool, 10 cs.
British American Tobacco Co., Suffren, Havre, 182 cs.
British American Tobacco Co., Ile de France, Havre, 84 cs.
Liggett & Myers Tobacco Co., Ile de France, Havre, 25 cs.
Standard Products Corp., Ile de France, Havre, 128 cs.
Standard Products Corp., McKeesport, Havre, 40 cs.
De Manduit Paper Corp., McKeesport, Havre, 246 cs.

WALL PAPER

R. F. Downing & Co., New York, Hamburg, 21 bls.
W. H. S. Lloyd & Co., Caronia, Liverpool, 3 bls.
W. H. S. Lloyd & Co., American Shipper, ——, 4 bls.
F. J. Emmerich, American Shipper, ——, 17 bls.

PAPER HANGINGS

A. C. Dodman, Jr., Inc., Caronia, Liverpool, 2 cs., 1 ble.
W. H. S. Lloyd & Co., American Shipper, London, 21 bls., 17 cs.
Whiting & Patterson Co., Olympic, Southampton, 3 cs.
F. J. Emmerich, Suffren, Havre, 2 cs.

PAINTED PAPER

R. F. Downing & Co., Ile de France, Havre, 7 cs.

NEWS PRINT

Parsons & Whittemore, Inc., New York, Hamburg, 716 rolls.
Parsons & Whittemore, Inc., Argosy, Helsingfors, 829 rolls.
H. Reeve Angel & Co., Inc., Argosy, Helsingfors, 259 rolls.

PRINTING PAPER

Keuffel & Esser Co., New York, Hamburg, 38 rolls.
Oxford University Press, Caronia, Liverpool, 14 cs.
R. Hoe Co., American Shipper, London, 2 bls.
P. C. Zuhlke, Samland, Antwerp, 50 cs.
Birn & Wachenheim, Samland, Antwerp, 34 cs.

PACKING PAPER

Haule Wax Paper Manfg. Co., New York, Hamburg, 16 cs.

WRITING PAPER

F. Loeser & Co., McKeesport, Havre, 3 cs.
R. Weill & Co., McKeesport, Havre, 2 cs.

DRAWING PAPER

Keuffel & Esser Co., New York, Hamburg, 47 cs.
International Forwarding Co., Carlier, Antwerp, 8 cs.
Steffens Jones Co., Thuringia, Hamburg, 3 cs.

NOTE PAPER

H. Reeve Angel & Co., Inc., American Shipper, London, 1 cs.

FILTER PAPER

H. Reeve Angel & Co., Inc., American Shipper, London, 7 cs.
A. Giese & Son, Thuringia, Hamburg, 4 cs.
E. Fougera & Co., Roussillon, Bordeaux, 87 cs.

SURFACE COATED PAPER

P. C. Zuhlke, N. Amsterdam, Rotterdam, 30 cs.
Whiting & Patterson Co., Inc., New York, Hamburg, 8 cs.
Globe Shipping Co., New York, Hamburg, 3 cs.
P. C. Zuhlke, Samland, Antwerp, 25 cs.
Gevaert Co. of America, Samland, Antwerp, 64 cs.

SILK PAPER

Meadows, Wye & Co., Bellepline, Rotterdam, 25 cs.

DECALCOMANIA PAPER

B. F. Drakenfeld & Co., Baltic, Liverpool, 15 cs. (duplex).
B. F. Drakenfeld & Co., Baltic, Liverpool, 4 cs. (simplex).

TISSUE PAPER

B. F. Drakenfeld & Co., Baltic, Liverpool, 5 cs.
F. B. Vandegrift & Co., Caronia, Liverpool, 3 cs.
Sugarman & Goodman, Caronia, Liverpool, 1 cs.
G. W. Sheldon & Co., American Shipper, London, 2 cs.
F. C. Strype, Argosy, Helsingfors, 2 cs.

GREASE PROOF PAPER

American Express Co., New York, Hamburg, 8 cs.

GLAZED PRESS PAPER

Richardson Bros., Baltic, Liverpool, 3 cs.

CERAMIC PAPER

B. F. Drakenfeld & Co., Baltic, Liverpool, 4 cs.

ENVELOPES

Japan Paper Co., American Shipper, London, 2 cs.

STRAW BOARD

Perkins, Goodwin & Co., N. Amsterdam, Rotterdam, 138 rolls.
R. Wilson Paper Corp., N. Amsterdam, Rotterdam, 90 rolls.
A. Vuyk, N. Amsterdam, Rotterdam, 755 cs.

MISCELLANEOUS PAPER

J. Beckhard & Co., N. Amsterdam, Rotterdam, 5 cs.
Steiner Paper Corp., N. Amsterdam, Rotterdam, 39 cs.
International Forwarding Co., N. Amsterdam, Rotterdam, 9 pkgs., 4 bls., 14 rolls.
D. S. Walton & Co., New York, Hamburg, 675 rolls, 37 bls.
J. E. Anderson, Oscar II, Copenhagen, 4 cs.
Keller Dorian Paper Co., Suffren, Havre, 21 cs.
E. Dietzgen & Co., Suffren, Havre, 22 cs.
Coenca Morrison & Co., Suffren, Havre, 4 cs.
Coir de Paris, Suffren, Havre, 3 cs.
Standard Products Corp., Suffren, Havre, 12 pkgs., 4 cs.

RAGS, BAGGINGS, ETC.

Castle & Overton, Inc., Incemore, Scotland, 158 bls. paper stock.
N. Y. Trust Co., Incemore, Leith, 71 bls. bagging.
Furness, Withy & Co., Incemore, Dundee, 44 bls. bagging.
Phila. Girard National Bank, Zinal, Barcelona, 164 bls. rags.
Castle & Overton, Inc., Zinal, Barcelona, 85 bls. rags.
S. Birkenstein & Son, Zinal, Valencia, 63 bls rags.
Beckman, Dowson Co., Sac City, Antwerp, 143 bls. rags.
C. R. Spence, Sac City, Antwerp, 91 bls. rags.
D. M. Hicks, Inc., Sac City, Antwerp, 142 bls. flax waste.
Bank of New York, Mercer, Rotterdam, 33 bls. rags.
Salomon Bros. & Co., Mercer, Rotterdam, 45 bls. rags.
Warren Manfg. Co., M. Arnus, Barcelona, 154 bls. bagging.
Castle & Overton, Inc., M. Arnus, Barcelona, 116 bls. rags.
Castle & Overton, Inc., M. Arnus, Barcelona, 86 bls. bagging.
Overton & Co., N. Amsterdam, Rotterdam, 24 bls. bagging.
J. Chalfin, Cabo Torres, Bilbao, 186 bls. rags.
Brown Bros. & Co., New York, Hamburg, 51 bls. rags.
Castle & Overton, Inc., Oscar II, Copenhagen, 147 bls. rags.
E. A. Stone, McKeesport, Havre, 9 bls. rags.
V. Galaup, McKeesport, Havre, 124 bls. rags.
Overton & Co., McKeesport, Havre, 379 bls. bagging.
D. I. Murphy, McKeesport, Havre, 166 bls. bagging.
E. Butterworth & Co., Inc., McKeesport, Dunkirk, 62 bls. rags.
Salomon Bros. & Co., McKeesport, Dunkirk, 35 bls. rags.
Katzenstein & Keene, Inc., McKeesport, Dunkirk, 72 bls. rags.
Van Oppen & Co., McKeesport, Dunkirk, 29 bls. rags.
V. Galaup, McKeesport, Dunkirk, 77 bls. rags.
A. W. Fenton, Inc., McKeesport, Dunkirk, 53 bls. rags.
Darmstadt, Scott & Courtney, China Maru, Genoa, 33 bls. bagging.
S. Birkenstein & Son, Bellepline, Rotterdam, 96 bls. bagging.
Whaling Waste Products Corp., Coahoma County, Antwerp, 117 bls. jute waste.
B. D. Kaplan, Coahoma County, Antwerp, 5 bls. rags.
E. Mayer, Coahoma County, Antwerp, 270 bls. rags.
E. Butterworth & Co., Inc., Coahoma County, Antwerp, 208 bls. bagging.
E. Butterworth & Co., Inc., Coahoma County, Antwerp, 4 bls. flax waste.
V. Galaup, Luxpalile, Leghorn, 38 bls. rags.
Castle & Overton, Inc., American Shipper, London, 136 bls. rags.
Bulkley, Dunton & Co., Ryndam, ——, 17 bls. rags.
E. J. Keller Co., Inc., Tijuca, Antwerp, 451 bls. flax waste.
Royal Manfg. Co., Tijuca, Antwerp, 45 bls. cotton waste.
Castle & Overton, Inc., Tijuca, Antwerp, 190 bls. flax waste.
Brown Bros. & Co., Thuringia, Hamburg, 21 bls. rags.
E. J. Keller Co., Inc., Thuringia, Hamburg, 40 bls. rags.
A. W. Fenton Co., Inc., Thuringia, Hamburg, 55 bls. rags.
S. Birkenstein & Son, Lepanto, Newcastle, 282 bls. rags.
Basch & Greenfield, Lepanto, Newcastle, 20 bls. rags.
G. W. Millar & Co., Lepanto, Newcastle, 314 bls. rags.
G. W. Millar & Co., Lepanto, Newcastle, 49 bls. bagging.
Salomon Bros. & Co., West Eldara, Antwerp, 87 bls. rags.
Salomon Bros. & Co., Waukegan, Havre, 14 bls. rags.
Salomon Bros. & Co., Caucasier, Antwerp, 78 bls. rags.
Salomon Bros. & Co., River Delaware, Alexandria, 104 bls. rags.

OLD ROPE

E. J. Keller Co., Inc., N. Amsterdam, Rotterdam, 41 bls.
W. Schall & Co., N. Amsterdam, Rotterdam, 75 bls.
Brown Bros. & Co., Bristol City, Bristol, 69 coils.
E. Butterworth & Co., Inc., Baltic, Liverpool, 55 bls.
G. W. Millar & Co., Inc., Lepanto, Hull, 97 bls., 95 coils.
N. E. Berzen, Lepanto, Newcastle, 73 coils.

CASEIN

National City Bank, American Legion, Buenos Aires, 417 bags.
E. M. Sergeant & Co., American Legion, Buenos Aires, 83 bags.
Kalbfleisch Corp., American Legion, Buenos Aires, 1,501 bags.
Georgetown Coated Paper Co., American Legion, Buenos Aires, 417 bags (to Canada).
Brown Bros. & Co., Roussillon, Bordeaux, 67 bags.

WOOD PULP

Castle & Overton, Inc., N. Amsterdam, Rotterdam, 400 bls. wood pulp.
Castle & Overton, Inc., New York, Hamburg, 700 bls. wood pulp.
Buck, Kiaer & Co., Inc., Korsholm, Stockholm, 300 bls. sulphite.
J. Anderson & Co., Pres. Wilson, Trieste, 500 bls. wood pulp.
J. Anderson & Co., Argosy, Sarpsborg, 2,550 bls. sulphite, 425 tons.
The Borregaard Co., Inc., Argosy, Sarpsborg, 336 bls. sulphate, 56 tons.
E. J. Keller Co., Inc., Thuringia, Hamburg, 546 bls. wood pulp.

WOOD FLOUR

State Chemical Co., N. Amsterdam, Rotterdam, 420 bags.

(*Continued on page 70*)

The

ST. REGIS PAPER COMPANY

Daily Capacity
525 TONS

Newsprint
Catalog and Directory Papers
Fibre Wrapping Papers
Packers Oiled Manila
Specialties

General Sales Office

49 Wall St., New York

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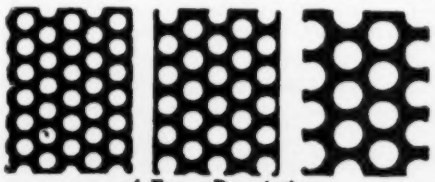


of Every Description
For Pulp and Paper Mills
THE HARRINGTON & KING PERFORATING CO.
5652 Fillmore St., Chicago, Ill.
NEW YORK OFFICE: 114 Liberty St.

Where EVERY MINUTE COUNTS

Rusco Belting Proves Its Efficiency and Economy

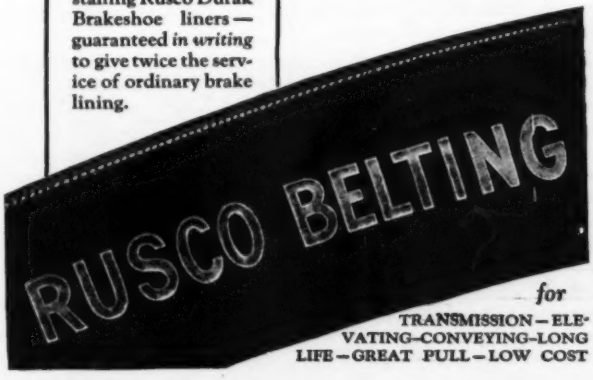
WHERE continuous production is vital—where every minute counts—Rusco belting effects important savings in production costs. Paper mills are realizing in this perfected solid woven belting a new standard of operating efficiency and a new economy in belting maintenance.

Solidly woven on powerful looms of our own design and manufacture—permanently waterproofed by a special process that penetrates every fibre, Rusco belting is especially adapted to the heavy loads and difficult atmospheric conditions in the paper making industry. Its sturdy no-ply construction insures exceptionally long life and guards against loss of power caused by internal friction.

Rusco belting possesses great strength and pulling power, and stands up under shock loads. Rusco delivers full power without slip, reduces belting failure and cuts down annual belting purchases.

Our technical staff will be glad to tell you how Rusco can lower belting costs in your plant. For complete information write Engineering Dept. P2, The Russell Manufacturing Co., Middletown, Conn.

Reduce brake maintenance costs on your motor trucks by installing Rusco Durak Brakeshoe liners—guaranteed *in writing* to give twice the service of ordinary brake lining.



for
TRANSMISSION—ELEVATING—CONVEYING—LONG LIFE—GREAT PULL—LOW COST

Imports of Paper and Paper Stock

(*Continued from page 68*)

BOSTON IMPORTS

WEEK ENDING MARCH 17, 1928

Green, Hamilton & Co., Mercer, Rotterdam, 100 bls. cotton waste.

Forte Moran Co., Mercer, Rotterdam, 109 bls. rags.

Buck, Kiaer & Co., Inc., Korsholm, Stockholm, 900 bls. chemical pulp.

Salomon Bros. & Co., Binnendyk, Rotterdam, 46 bls. rags.

Bulkley, Dunton & Co., Innoko, ——, 375 bls. wood pulp.

Bulkley, Dunton & Co., Seattle Spirit, ——, 102 bls. wood pulp.

Castle & Overton, Inc., Blydendyk, Holland, 720 bls. wood pulp.

E. J. Keller Co., Inc., Caledonian, Manchester, 68 bls. bagging.

E. J. Keller Co., Inc., Oregonian, ——, 400 bls. bagging.

NORFOLK IMPORTS

WEEK ENDING MARCH 17, 1928

O. Ray, Korsholm, Stockholm, 83 rolls news print.

Darmstadt, Scott & Courtney, Coahoma County, Antwerp, 42 bls. bagging.

National City Bank, Coahoma County, Antwerp, 252 bls. bagging.

British American Tobacco Co., Coahoma County, Antwerp, 65 cs. printed cigarette wrappers.

NEW ORLEANS IMPORTS

WEEK ENDING MARCH 17, 1928

Salomon Bros. & Co., Edam, Antwerp, 245 bls. flax waste.

BALTIMORE IMPORTS

WEEK ENDING MARCH 17, 1928

American Exchange Irving Trust Co., Luxpalile, Naples, 45 bls. rope.

Bulkley, Dunton & Co., Anneborg, ——, 3,000 bls. wood pulp.

PHILADELPHIA IMPORTS

WEEK ENDING MARCH 17, 1928

Brown Bros. & Co., Sac City, Antwerp, 200 bls. rags.

Phila. Girard National Bank, Sac City, Antwerp, 111 bls. rags.

Salomon Bros. & Co., Sac City, Antwerp, 60 bls. rags.

J. Lang Paper Co., Sac City, Antwerp, 22 bls. rags.

Equitable Trust Co., Sac City, Antwerp, 66 bls. rags.

True & McClelland, Sac City, Antwerp, 10 bls. rags.

D. I. Murphy, Sac City, Antwerp, 68 bls. rags.

S. Birkenstein & Son, Mercer, Rotterdam, 337 bls. rags.

G. M. Graves Co., Mercer, Rotterdam, 191 bls. rags.

Green, Hamilton & Co., Mercer, Rotterdam, 25 bls. thread waste.

E. J. Keller Co., Inc., Mercer, Rotterdam, 328 bls. rags.

D. I. Murphy, Mercer, Rotterdam, 190 bls. rags.

E. Butterworth & Co., Mercer, Rotterdam, 201 bls. rags.

S. E. Ingber, Mercer, Rotterdam, 156 bls. rags.

Melrose Paperstock Co., Mercer, Rotterdam, 130 bls. rags.

Bank of The Manhattan Co., London Mariner, London, 147 bls. rags.

J. Lang Paper Co., London Mariner, London, 219 bls. rags.

Old Colony Trust Co., Bristol City, Bristol, 290 bls. old rope.

J. B. Moors & Co., Bristol City, Bristol, 436 bls. rags.

J. A. Steer & Co., Bristol City, Bristol, 80 bls. old rope.

Bank of The Manhattan Co., Bristol City, Bristol, 90 bls. rags.

G. M. Graves Co., Bristol City, Bristol, 84 bls. rags.

J. W. Hampton, Jr., &Co., Bristol City, Bristol, 57 tons, 7 cwt. china clay.

A. Hurst & Co., McKeesport, Havre, 37 bls. rags.

Castle & Overton, Inc., McKeesport, Havre, 546 bls. rags.

Katzenstein & Keene, Inc., McKeesport, Havre, 187 bls. rags.

E. J. Keller Co., Inc., McKeesport, Havre, 165 bls. rags.

A. Hurst & Co., McKeesport, Havre, 42 bls. rags.

Judson Freight Forwarding Co., McKeesport, Havre, 82 bls. rags.

Salomon Bros. & Co., McKeesport, Dunkirk, 196 bls. rags.

Goldman, Sachs & Co., McKeesport, Dunkirk, 66 bls. rags.

Katzenstein & Keene, Inc., McKeesport, Dunkirk, 284 bls. rags.

J. A. Steer & Co., McKeesport, Dunkirk, 130 bls. rags.

Castle & Overton, Inc., McKeesport, Dunkirk, 48 bls. rags.

E. J. Keller Co., Inc., McKeesport, Dunkirk, 204 bls. rags.

E. J. Keller Co., Inc., Corson, ——, 114 bls. bagging.

E. J. Keller Co., Inc., Corson, ——, 848 bls. rags.

Salomon Bros. & Co., Luxpalile, Marseilles, 114 bls. rags.

Salomon Bros. & Co., Waukegan, Dunkirk, 338 bls. rags.

Salomon Bros. & Co., Bankdale, Marseilles, 143 bls. rags.

Salomon Bros. & Co., Oklahoma, Havre, 1,123 bls. rags.

Salomon Bros. & Co., Oklahoma, Dunkirk, 231 bls. rags.

Salomon Bros. & Co., Gerwin, Bremen, 58 bls. rags.

Record English China Clay Production in 1927

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., March 19, 1928.—Although the production of China clay in England during December, 1927, fell a good deal below the figure for November, it brought the total output for the year up to the record mark of 997,269 long tons, just short of the million mark, reports Trade Commissioner Homer S. Fox, London, to the Department of Commerce.

The highest previous record for English china clay production was in 1912, when there was an output of 963,895 tons, including 73,284 tons of china stone. The 1927 total was made up of 920,074 tons of china clay, 54,551 of china stone and 22,644 of ball clay; it compares with an output of 934,360 tons in 1926, all three items showing increase although in the case of ball clay the difference was unimportant.

Preliminary figures for 1927 indicate an exportation of 661,826 long tons of china clay during that year compared with 651,990 tons in 1926 and 652,576 in 1925. A satisfactory feature of the export trade for 1927 has been the gradual improvement in overseas markets, not only in the United States but on the Continent. Belgium took the largest share of English shipments of china clay to Continental Europe in 1927. Germany, while still a long way behind its prewar receipts of 90,000 tons per annum is gradually creeping up in the export list and in 1927 reached its highest total since the war. Exports to the United States decreased markedly during December, 1927, amounting to only 16,251 tons compared with 26,837 tons during December, 1926, a decline of almost 40 per cent; figures for the whole of 1926 and 1927 show that the annual exportation to that country also showed a decided drop, amounting to about 27 per cent.

Stewart Inso Board Co. Elects Officers

ST. JOSEPH, Mo., March 20, 1928.—At the first annual meeting of the Board of Directors of the Stewart Inso Board Company, A. D. Stewart was re-elected president, Charles Waddles was elected vice president, I. A. Vant, treasurer, James A. Davis, secretary, and O. Robinson, assistant secretary-treasurer. The board of directors consists of the officers with the exception of Mr. Robinson, and the following men: William Goetz, St. Joseph, Mo.; William Albrecht, St. Joseph, Mo.; J. J. Linn, Kansas City, Mo.; Ed. S. Lindas, Wichita, Kans.

The Inso Board plant has been in operation for about thirty days, turning out daily about 60,000 square feet of insulating board made from wheat straw. Technical difficulties have been overcome and within a short while the plant will be running to capacity.

J. D. Lacey Co. Starts Jacksonville Office

The James D. Lacey Company, of Jacksonville, Fla., has established an office at 405 First National Bank Building, Memphis, Tenn., and Clarence W. Griffith, of Memphis, Tenn., has been appointed as manager.

Mr. Griffith has had many years of experience in timber and lumber matters and will be a valuable addition to the Lacey organization. The James D. Lacey Company is a subsidiary of James D. Lacey & Co. The Lacey organization now has offices in Chicago, New York, Seattle, New Orleans, Jacksonville, Memphis, Montreal and Vancouver and is, therefore, in close touch with all timber regions. Their activities cover buying and selling timber, estimating, appraising, engineering and management.

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The Use of

ELIXMAN CORES

protects your rolls and insures their delivery to your customer in perfect condition. They eliminate claims for damages.

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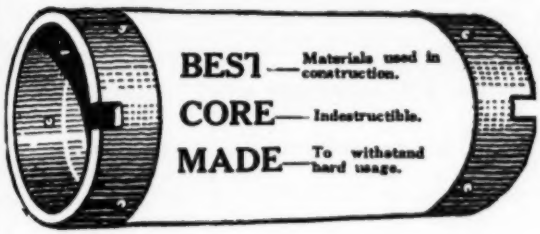


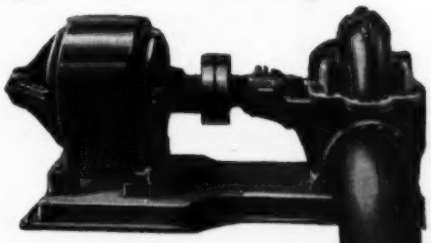
Your two sources of supply are

Canadian Elixman Company
HAMILTON, ONTARIO

Elixman Paper Core Company
CORINTH, N. Y.

A Rod Packing That Withstands Caustic Soda and Other Chemicals

Style "C" Packing



is made to resist the destroying element of caustic soda and similar chemicals.
Its lubricant can be relied upon to not only counteract the chemical destruction, but to also keep the pump rod so perfectly lubricated as to practically do away with rod friction.

We can convince you of the economy of using STYLE "C" if you will let us send you a free working sample. State size desired.

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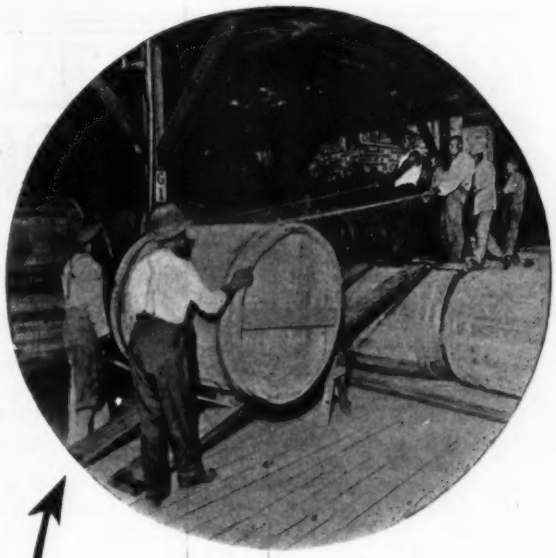
Sole Manufacturers
109 Duane St., New York

CAUSTIC SODA



Which Method Looks Better To You?

There isn't much doubt as to which way is cheaper, quicker, safer,--more efficient, is there? Your problem may not be the handling of casks of this size but there are other handling or storage problems around your plant where a Lakewood Tier Lift Truck would mean a saving of from 3 to 7 men.

We have just issued a new catalog that illustrates ways and means of cutting down handling costs in your plant. We will be glad to send you a copy of this Bulletin 35-P.

LAKEWOOD
The Lakewood Engineering Co. CLEVELAND · O.

New York Market Review

Office of THE PAPER TRADE JOURNAL,
Wednesday, March 21, 1928.

Demand for the various grades of paper during the past week was about normal for the time of the year and the market exhibited a fairly strong undertone. Prices are being maintained at recently quoted levels and shading is infrequent. Reports from the sales organizations of the leading paper houses denote that the spring campaign is proving successful and a feeling of optimism prevails.

The situation in the news print market is practically unchanged. Production is being maintained in heavy volume and consumption appears to be proceeding in sufficient volume to absorb the output. Spot supplies are reported to be fairly generous at present although quotations remain unaltered. Contract shipments are going forward at a steady pace.

Conditions in the paper board market are satisfactory for the season. The various grades are in good request and the volume of inquiries being received for future business is encouraging. Prices remain steady and unchanged. The fine paper market continues to improve and light papers are also in good demand. Steadiness prevails in the coarse paper market, with wrapping paper particularly active.

Mechanical Pulp

Trading in the ground wood market was mostly along routine lines during the past week. Due to the restriction of the production of mechanical pulp abroad, offerings are rather limited. Now that the weather is becoming more favorable there is a prospect of increased domestic production and stocks may be more plentiful in the near future. Quotations on both imported and domestic mechanical pulp are practically unchanged.

Chemical Pulp

There are no signs of the termination of the lockout in the Swedish pulp and paper mills at present and consequently the local chemical pulp market is decidedly stiffening. During the past week an excellent amount of business was transacted in the different grades and more of the transactions were reported to have been made at the maximum quotations than at the minimum. Supplies continue to move into consumption in a steady manner.

Old Rope and Bagging

More interest in old rope and bagging seems to be developing from the paper mills. Supplies of domestic old rope are not too plentiful and while prices are unchanged the undertone of the market is quite steady. The different grades of bagging are in fairly good request. Prices remain practically unaltered.

Rags

While new rags are moving in excellent volume for the time of the year, old rags and imported rags are only moderately active. Cotton cuttings continue in good demand at the prevailing quotations. It is not believed that there are any undue accumulations in the local rag market and prices should become firmer when the demand from the mills increases to any great extent.

Waste Paper

No radical changes transpired in the paper stock market during the week. Demand for book and ledger stock continues persistent and as supplies of these grades are scarce, quotations are very firm. Most of the other grades of waste paper are in normal request for the time of the year and prices are practically unchanged from recently quoted levels.

Twine

The position of the twine market is sound and due to the increased consumption of wrapping paper for Spring and Easter requirements, the outlook for the industry is very encouraging. Prices of the various grades are holding up very well, while there is very little talk of concessions around.

K. S. Warner to Address Paper Salesmen

K. S. Warner, of the John F. Sarle Company, Inc., vice-president of the Fine Paper Division of the National Paper Trade Association, will speak at the luncheon of the New York Division of the Salesmen's Association of the Paper Industry on Monday, March 26. Mr. Warner's topic will be "My Impressions of Paper Salesmen."

This luncheon on March 26 is the first of a series planned by the New York Division to cover the merchandising problems of each of the major grades of paper. The luncheons will be held at the usual time and place, but at each one, in addition to the regular features, there will be a thorough discussion of the merchandising problems of some major grade of paper.

At the luncheon on March 26 the grade under special consideration will be Writing Paper. This will be followed by the other major grades in the near future. The new plan is the result of the report of the Diagnosis Committee appointed recently by Vice-President S. C. Knode, of the New York Division. C. W. Nickenig, of the Canadian Newsprint Company, is chairman of this committee, the other members being Geo. P. Lee of the Mount Holly Paper Company and J. W. Quimby, of the Allied Paper Mills.

At the recommendation of this committee, Mr. Knode has appointed the following Luncheon Committee to handle the special luncheons: Dr. E. O. Merchant, the G. H. Mead Company, chairman; Alan B. Helffrich, Orono Pulp and Paper Company; Harold R. Hopkins, Oxford Paper Company; Geo. P. Lee, Mount Holly Paper Company, and C. W. Nickenig, Canadian Newsprint Company.

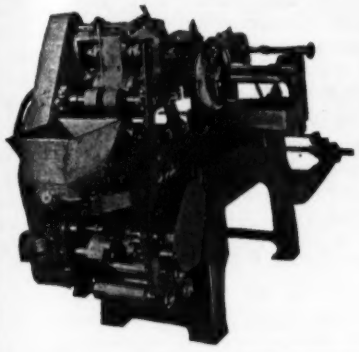
The luncheon on March 26th will be in charge of Mr. Lee, who is the writing paper representative on the committee.

U. S. Chamber of Commerce to Convene

The Sixteenth Annual Meeting of the United States Chamber of Commerce will be held in Washington, D. C., from May 7 to 11, inclusive. The following delegates have been appointed to represent the American Paper and Pulp Association: L. M. Alexander, national councillor; M. E. Marcuse, substitute national councillor; D. C. Everest, delegate and O. M. Porter, substitute delegate.

Foreign Paper Reports

Quarterly reports on the condition of the paper industry in the leading foreign countries will in future be supplied to the American Paper and Pulp Association by the U. S. Trade Commissioners through the courtesy of the Paper Section of the Department of Foreign and Domestic Commerce.



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Paper Bag Machinery

Get My Quotations Before Placing Your Orders
Special Machinery Designed and Built

A. L. PARRISH,
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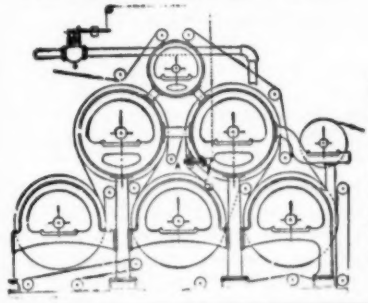
YOU'LL MAKE NO MISTAKE IN ACCEPTING IT



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will do everything we claim for it and more. The test costs you nothing until you are satisfied. Many mills tried one and now have every machine equipped. Write for list of users and other information.

W. F. PICKLES **Buckland, Conn.**

Cotton and Paper Rolls
Super Calenders
Friction Calenders
Embossing Calenders
Hydraulic Presses and Pumps

Successors to the Granger Foundry & Machine Co.

The Textile-Finishing Machinery Company
PROVIDENCE, R. I.

TYPE "B" IRON EXTRACTOR *for* PAPER MAKING

It consists of special magnetic surfaces of great power over which the paper stuff is made to pass. As a result, all the iron and many other foreign substances are completely extracted. Hundreds of these devices are in use daily and no one of them has failed to give complete satisfaction. Write us for Bulletins and full data.

THE ROLAND T. OAKES CO., Holyoke, Mass.

Electrical Specialists. ***Established 1885***

Miscellaneous Markets

Office of THE PAPER TRADE JOURNAL,
Wednesday, March 21, 1928.

During the past week the demand for paper makers' chemicals was quite satisfactory and the local market exhibited a strong undertone. Inquiries for future business are being received by the manufacturers in excellent volume. Supplies continue to move into consumption at a steady pace. Prices are generally being well maintained and there is little talk of concessions around.

BLANC FIXE.—Trading in the blanc fixe market was mostly along routine lines during the week. Demand for both the pulp and the powder is about normal for the time of the year. Shipments against contract are proceeding in good volume. The pulp is quoted at $60 per ton, in bulk, and the powder is selling at from 4 cents to 4½ cents a pound, in barrels, at works.

BLEACHING POWDER.—Consumption of bleaching powder is being maintained in a normal manner and the bulk of the output is being absorbed readily by contract requirements. Prices remain steady and unchanged. Bleaching powder is offered at from $2 to $2.35 per 100 pounds, in large drums, at works, according to quantity.

CASEIN.—Demand for both imported and domestic casein is persistent and the market is in a sound position. Contract withdrawals are moving in fairly heavy volume. Imported casein is quoted at from 16½ cents to 17 cents a pound, while domestic casein is selling at from 16 cents to 17 cents a pound, all in bags, car lot quantities.

CAUSTIC SODA.—Production of caustic soda is being maintained in sufficient volume to take care of the prevailing demand. Shipments against contract are proceeding in a normal manner. Prices continue unchanged. Caustic soda is selling at from $2.90 to $2.95 per 100 pounds, in large drums, at works. The flake and the ground are quoted at from $3.30 to $3.35 per 100 pounds.

CHINA CLAY.—Most of the business transacted in the china clay market during the past week was along routine lines. Contract withdrawals were fairly heavy for the time of the year. Prices remain unaltered. Imported china clay is offered at from $15 to $25 a ton, in bulk, ship side. Domestic paper makers' clay is quoted at from $8 to $9 a ton, at mine, and pulverized at from $10 to $12 a ton.

CHLORINE.—The chlorine market exhibits a steady undertone. Demand for this product is persistent and the movement against contract continues heavy. Chlorine is quoted at 3½ cents a pound, in tanks, or multi-unit cars, at works, on contract orders. The spot quotation ranges from 3¾ cents to 4 cents a pound.

ROSIN.—Some improvement was noticed in the demand for rosin during the past week and prices were somewhat firmer. At the naval stores, the grades of gum rosin used in the paper mills are now selling at from $9.75 to $10.10 per 280 pounds, ex dock, in barrels. Wood rosin is quoted at from $7.50 to $8.30 per 280 pounds, at southern shipping points.

SALT CAKE.—Contract withdrawals of salt cake are moving in excellent volume. Demand for this product is lively and inquiries regarding future business are being received in good numbers. Prices are steady and unchanged. Salt cake is quoted at from $18 to $19 a ton, in bulk, at works. Chrome salt cake is offered at from $14 to $15 a ton, in bulk, at works.

SODA ASH.—Manufacturers of soda ash are maintaining production in satisfactory volume. Supplies are moving into consumption at a steady pace. Prices are holding up very well to previously quoted levels. Contract prices on soda ash, in car lots, at works, are as follows: in bags, $1.32½, and in barrels, $1.55.

STARCH.—The undertone of the starch market is firm. The recently announced revised schedule is being maintained without difficulty and the higher prices were believed to have been made necessary by the increased cost of raw materials and labor. The quotation on paper makers' starch is now $3.72 per 100 pounds, in bags, and $3.89 per 100 pounds, in barrels.

SULPHATE OF ALUMINA.—Steadiness prevails in the sulphate of alumina market. This product is in excellent request and contract withdrawals are moving into consumption in a satisfactory manner. Prices are practically unchanged. Commercial grades of sulphate of alumina are quoted at from $1.40 to $1.55 per 100 pounds, in bulk. The iron free is selling at from $1.90 to $2.05 per 100 pounds, in bags, at works.

SULPHUR.—The sulphur market was moderately active during the past week. Shipments on contract were maintained in fairly heavy volume. Prices remained steady and unchanged from the recently quoted basis. Sulphur is selling at from $18 to $19 a ton, in bulk, at mine, according to quantity. The spot quotation is $20 a ton.

TALC.—Conditions in the talc market are practically unchanged. The demand for this product is about normal for the time of the year. Prices remain unaltered. American talc is selling at from $16 to $18 a ton, at eastern mines. Imported talc is still quoted at from $18 to $22 a ton, ship side.

Buys Crown Paper & Bag Co.

JACKSON, Mich., March 5, 1928.—The Crown Paper and Bag Company, one of the oldest concerns of the city, has been purchased by a company headed by W. A. Bunting, Jackson, Mich. Mr. Bunting is president of the W. A. Bunting Company, wholesale hay dealer, director of the Jackson City Bank, and is also associated with several other interests in the city. Mr. Bunting has just left on a trip to Africa and is expected to be gone about four months.

Mr. Bunting has been elected president of the new company. Don M. Finch has been chosen vice president and general manager. Mr. Finch started in the paper business 18 years ago with the Crown Paper and Bag Company, staying there two years; going from that firm to the Union Paper and Twine Company, Detroit, Mich., for six years, and for the last ten years has been representing the Chope-Stevens Paper Company of Detroit in the Jackson territory, with offices at Jackson.

W. Kenneth Bunting, who is at present associated with his father in the W. A. Bunting Company, is secretary and treasurer of the new company. In the near future he will be actively connected with the paper company.

B. E. Dewey, who has been a salesman for several years for the company, has been appointed one of the directors.

The Crown Paper and Bag Company was owned and controlled as a wholesale paper concern by the late George L. Green from 1917 until his sudden death on February 2, 1928, as he was leaving his office. It was founded about 1890 by G. M. and J. D. Smalley, Mr. Green entering the business in 1895 as a salesman and gradually working to the position of general manager in 1915, acquiring the business in 1917.

Gradual expansion of the business, which has largely dealt in coarse papers, to include a complete line of fine papers, will be undertaken shortly as well as an increase in the capital stock from the present forty thousand dollars to one hundred fifty thousand to two hundred thousand dollars for the expansion.

Financial statement of the company as of January 1, 1928, showed approximately twenty-one dollars' worth of assets for each dollar's worth of liabilities.

W. A. Bunting will continue as head of the wholesale hay firm of which he is also the president, leaving active management of the Paper and Bag Company to Mr. Finch.

Paper From Alpinia Nutaus Stems

The British Empire Chamber of Commerce of the U. S. A., is exhibiting in its offices samples of paper made from the stems of Alpinia Nutaus. Manufacturers who are interested in obtaining further details concerning either the raw material or the paper product therefrom, should communicate with R. F. Munro, secretary, 25 Broadway, New York City.

For reliable running and average long life

LINDSAY FOURDRINIER WIRES

are unsurpassed

We make them for the largest and fastest machines.

Cylinder Wires All Sizes

The Lindsay Wire Weaving Co.

Collinwood Sta. CLEVELAND, OHIO

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A Handy Andy in the mill

Silicate of soda first of all is used in the furnish to improve the quality of your sheet. If acid white water is used in the beater, the addition of silicate will prevent the formation of oxycellulose. You can also rely on a clean sheet, because the regular use of silicate keeps the pipe lines clean. Then when you want a neat splice on supercalendered paper, use silicate of soda. Silicate makes clay thin enough to be pumped through pipes. Every mill has several jobs for silicate of soda.*

* Quartz Quality Silicate—"A-Syrup" Brand.

Philadelphia Quartz Co.

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Prompt deliveries made from stocks in

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Hundreds of years!

The number of years we have served each of our customers, if added together, would run into the centuries. These customer-years mean just one thing—Heller & Merz quality is satisfactory.

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CLAY

OF ABSOLUTE UNIFORMITY

American Made for American Trade

Two Leading American Clays

H. T. BRAND
For Coating and Filling
Now used in many of largest paper mills

KLONDYKE BRAND
Filler Clay

43 years' experience in American washed clays are back of these products.

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50 Church Street *New York*

Market Quotations

Quoted by Hepburn & Co., 74 Broadway, N. Y. City, to whom all inquiry for quotations on these or any other Securities is referred.

BONDS	BID	OFFERED
A. P. W. Pulp & Power, 7s 1945	101	102
American Writing Paper, 6s 1947	80	82
Bastrap Pulp & Paper, 6½s 1940	100	103
British Columbia Pulp & Paper, 6s 1950	85	90*
Beaver Products Corp., 7½s 1942	106	109
Bedford Pulp & Paper, 6½s 1942	98½	None
Brown Paper Co., 1st 5½s 1946	96½	99
Bryant Paper Co., 6s 1942	100½	102
Cape Breton Pulp & Paper, 6s 1932	101	103
Central Paper, 7s 1933	85	None
Central Paper Serial 6, 6½s 1942	89	...
Champion Coated Paper, 6s 1926 to 1932	99	...
Champion Fibre, 8s 1930	100	...
Champion Paper Corp'n, 1st 6s 1945	95	97
Continental Paper Products, 6½s 1943	88	91½
Cornell Wood Prod., 7½s 1937	100	104*
Crown Willamette Paper, 6s 1951	100	102
Donnaconna Paper, 6s 1940	101	102½
Della Paper & Pulp Serial, 6s 1926-38	*95	...
Eastern Mfg. Co., 7s 1938	89	91
Eddy Paper, 7½s 1931	101	103
Escanaba Paper Serial, 6s 1928	99¾	...
Filer Fibre Serial, 7s 1926-39	95	...
Fort Orange Paper, 7s 1942	99	102
Fox River Paper, 7s 1931	99	...
Gair Company, 5½s 1942	96	99
Gilbert Paper Co., 6½s 1926-29	91	None
Hammermill Paper, 6s 1939	100	103*
Hoberg Paper & Fibre, 7s 1937	94½	96
Itaska Paper & Prairie River Power, J+5½s 1926-38	99	101
Itaska Paper, 1st 6s 1933-38	99	101
Kalamazoo Veg. Parchment, 6s 1938	98	...
Marinette & Menominee, 7½s 1936	100	103
Menasha Printing & Carton, 6½s 1939	99½	...
Monroe Paper Products, 7½s 1932	96	...
Munising Paper, 6s 1927-36	96	100
Nekoosa Edwards, 1st Ref. 6s 1928 to 1942	96	99*
Orono Pulp & Paper, 6s 1943	98	...
Orono Pulp & Paper, 5s 1941	94	...
Oswego Falls Corp., 6s 1941	98	100*
Oxford Paper, 6s 1947	104	...
Paepcke Paper Mills, 7s 1930	99	None
Parsons Pulp & Lumber, 7s 1928	97	...
Parker Young Co., 6½s 1944	96½	98½
Paterson Parchment Paper, 6s 1938	100½	102
Penobscot Chemical Fibre, 6s 1942	98	...
Queens City Paper, 7s 1932	95	100*
Richardson Co., 6s 1938	100	...
River Raisin Paper, 6s 1936	96	...
Spanish River Pulp & Paper, 8s 1941	108	110
Stevens & Thompson Paper, 6s 1942	93	95
St. Anne Paper, 6½s 1946	99	101
St. Croix Paper, 5s 1936-37	95	98*
St. Regis Paper Serial, 6½s 1926-35	99½	101
Tait Paper & Color Industries, 6s 1934	90	95
Taggart Bros. Co., 6s 1944	95	97
Ticonderoga Pulp & Paper, 5s 1930	94	98
Ticonderoga Pulp & Paper, 6s 1940	99	101
Warren (The S. D.) Company, 6s 1945	99	101
Wotab Paper, 6½s 1943	102	...
Westfield River Paper, 7s 1926-43	91	...
Whitaker Paper, 7s 1942	106	108

STOCKS	BID	ASKED
American Box Board, Pfd.	8	10
American Box Board, Com.	8	10
Am. Tissue Mills, 7% Pfd.	90	93
British Columbia P. & P., Pfd.	54	58
Brompton Pulp & Paper, 8% Pfd.	100	102
Brown Corpn., 7% Pfd.	100	104
Champion Fibre, 7% Pfd.	106	112
Diem & Wing, 7% Cum. Pfd.	90	...
Eastern Mfg. Co., 1st Pfd.	28	33
Great Northern Paper, Com.	70	75
Hammermill Paper, 7% Pfd.	105	110
Hinde & Dauch, Com.	135	...
Hinde & Dauch, Pfd.	100	...
Holyoke Card & Paper	160	None
Marathon Paper Mills, Com.	125	...
Midwest Box Co., Pfd. 8%	94	98
Midwest Box Co., Pfd. 6%	92	97
Louis De Jonge Co., 7% Pfd.	93	96
Oxford Papers, Com.	160	170
Oxford Paper Co., Pfd.	105	108
Penobscot Chemical Fibre, Com.	65	75*
Richardson, 7% Pfd.	160	...
Rubberoid	74	77
Seaman Container, Class B (par $1)	1	None Off.
Seaman Paper Co.	Wanted	None Off.
St. Croix Paper	150	170
St. Regis Paper Co., 7% Cum. Pfd.	101½	104½
Westfield River Paper Co., 1st Pfd.	Wanted	None Off.
West Virginia Pulp and Paper Company	50	55
West Virginia Pulp & Paper, Pfd.	101	103
Whittaker Paper 7% Cum. Pfd.	98	103

* Nominal.

Paper

(F. o. b. Mill)

Ledgers	11.00	@38.00
Bonds	9.00	@45.00
Writings—		
Extra Superfine	14.00	@32.00
Superfine	14.00	@32.00
Tub sized	10.00	@15.00
Engine Sized	8.00	@11.00
News—		
Rolls, contract	3.25	@ —
Rolls, transient	3.25	@ 3.50
Sheets	3.65	@ 3.85
Side Runs	3.00	@ 3.75
Book, Cased—		
S. & S. C.	6.35	@ 7.75
M. F.	6.25	@ 7.75
Coated and Enamel	8.00	@15.00
Lithograph	8.00	@15.00
Tissues—Per Ream—		
White No. 1	.75	@ 1.00
Anti-Tarnish	1.10	@ 1.90
Colored	1.00	@ 2.00
White No. 2	.75	@ .85
Kraft	.90	@ 1.00
Manila	.75	@ .85
Kraft—		
No. 1 Domestic	6.25	@ 6.50
No. 2 Domestic	4.50	@ 4.75
Southern	4.25	@ 4.50
Imported	6.50	@ 7.00
Manila—		
No. 1 Jute	9.00	@ 9.25
No. 2 Jute	7.75	@ 8.50
No. 1 Wood	4.75	@ 5.25
No. 2 Wood	4.00	@ 4.50
Butchers	3.75	@ 4.25
Fibre Papers—		
No. 1 Fibre	5.00	@ 5.50
No. 2 Fibre	4.75	@ 5.25
Common Bogus	2.75	@ 3.00
Screenings	3.00	@ 3.25
Card Middles	4.00	@ 5.00
Glassine—		
Bleached, basis 25 lbs.	13.00	@16.00
Bleached, basis 20 lbs.	15.00	@16.00

(Delivered New York)

Boards—per ton—		
News	45.00	@47.50
Straw	57.50	@60.00
Chip	42.50	@45.00
Binders' Boards	70.00	@75.00
Sgl. Mla. Ll. Chip.	55.00	@60.00
Wood Pulp	80.00	@85.00
Container	67.50	@72.50

Mechanical Pulp

(Ex-Dock)

No. 1 Imported—		
Moist	30.00	@31.25
Dry	32.00	@34.00

(F. o. b. Mill)

No. 1 Domestic	26.00	@29.00
Screenings	15.00	@20.00

Chemical Pulp

(Ex-Dock, Atlantic Ports)

Sulphite (Imported)—		
Bleached	3.40	@ 4.25
Easy Bleaching	2.70	@ 2.90
No. 1 strong unbleached	2.50	@ 2.65
Mitscherlich unbleached	2.60	@ 3.25
No. 2 strong unbleached	2.40	@ 2.50
No. 1 Kraft	2.55	@ 2.75
No. 2 Kraft	2.40	@ 2.50
Sulphate—		
Bleached	3.75	@ 3.85

(F. o. b. Pulp Mill)

Sulphite (Domestic)—		
Bleached	3.30	@ 4.75
Easy Bleaching Sulphite	2.60	@ 2.75
News Sulphite	2.40	@ 2.65
Mitscherlich	3.00	@ 3.70
Kraft (Domestic)	2.60	@ 3.30
Soda Bleached	3.25	@ 3.50
Sulphate Screenings—		
Coarse	.75	@ .85
Refined	1.50	@ 1.65

Domestic Rags

New Rags

(Prices to Mill f. o. b. N. Y.)

Shirt Cuttings—		
New White, No. 1	11.75	@12.25
New White, No. 2	8.00	@ 8.50
Silesias No. 1	7.25	@ 7.75
New Unbleached	10.50	@11.00
Washables	4.25	@ 4.75
Fancy	5.50	@ 6.00
Blue Overall	6.75	@ 7.25
New Blue Prints	5.25	@ 5.50
New Soft Blacks	5.25	@ 5.75
Mixed Khaki Cuttings	4.75	@ 5.25
Pink Corset Cuttings	8.00	@ 8.50
O. D. Khaki Cuttings	5.25	@ 5.75
Men's Corduroy	3.75	@ 4.25
New Mixed Blacks	3.50	@ 3.75

Old Rags

White, No. 1—		
Repacked	5.50	@ 6.00
Miscellaneous	4.50	@ 5.00
White, No. 2—		
Repacked	3.00	@ 3.50
Miscellaneous	2.50	@ 2.75
St. Soiled, White	2.00	@ 2.15
Thirds and Blues—		
Repacked	2.25	@ 2.50
Miscellaneous	1.75	@ 2.00
Black Stockings	3.25	@ 3.75
Roofing Rags—		
Cloth Strippings	1.70	@ 1.80
No. 1	1.70	@ 1.80
No. 2	1.50	@ 1.60
No. 3	1.30	@ 1.40
No. 4	1.25	@ 1.35
No. 5A	.95	@ 1.05

Foreign Rags

New Light Silesias	7.00	@ 7.50
Light Flannelettes	7.50	@ 8.00
Unbleached Cottons	10.00	@11.00
New White Cuttings	10.50	@11.50
New Light Oxfords	7.00	@ 7.50
New Light Prints	5.50	@ 6.50
New Mixed Cuttings	3.00	@ 3.50
New Dark Cuttings	2.75	@ 3.25
No. 1 White Linens	7.25	@ 8.00
No. 2 White Linens	5.50	@ 6.25
No. 3 White Linens	4.50	@ 5.00
No. 4 White Linens	3.00	@ 3.50
Old Extra Light Prints	2.75	@ 3.25
Ord. Light Prints	2.25	@ 2.50
Med. Light Prints	1.90	@ 2.10
Dutch Blue Cottons	2.25	@ 2.50
German Blue Linens	2.50	@ 2.75
German Blue Cottons	2.00	@ 2.25
Checks and Blues	1.75	@ 2.00
Lindsay Garments	1.85	@ 1.95
Dark Cottons	1.60	@ 1.65
Shoppery	1.55	@ 1.60
French Blues	2.25	@ 2.50

Old Rope and Bagging

(Prices to Mill f. o. b. N. Y.)

Gunny No. 1—		
Foreign	1.65	@ 1.75
Domestic	1.70	@ 1.75
Wool Tares, light	1.60	@ 1.65
Wool Tares, heavy	1.60	@ 1.65
Bright Bagging	1.60	@ 1.65
Small Mixed Rope	1.25	@ 1.40
Manila Rope—		
Foreign	3.00	@ 3.10
Domestic	3.75	@ 4.00
New Burlap Cut	2.75	@ 3.00
Hessian Jute Threads—		
Foreign	3.50	@ 4.00
Domestic	3.25	@ 3.50

Old Waste Papers

(F. o. b. New York)

Shavings—		
Hard, White, No. 1	3.25	@ 3.50
Hard, White, No. 2	2.75	@ 3.00
Soft, White, No. 1	2.60	@ 2.85
Flat Stock—		
Stitchless	1.75	@ 1.85
Overissue Mag.	1.70	@ 1.80
Solid Flat Book	1.65	@ 1.75
Crumpled No. 1	1.25	@ 1.35
Solid Book Ledger	2.00	@ 2.10
Ledger Stock	1.75	@ 1.85
New B. B. Chips	.65	@ .75
Manilas—		
New Env. Cut	2.40	@ 2.60
New Cuttings	1.60	@ 1.85
Extra No. 1 old	1.25	@ 1.35
Print	.85	@ .95
Container	.70	@ .80
Bogus Wrapper	.75	@ .85
Old Kraft Machine Compressed bales	1.95	@ 2.05
News—		
No. 1 White News	1.60	@ 1.70
Strictly Overissue	.80	@ .90
Strictly Folded	.65	@ .70
No. 1 Mixed Paper	.45	@ .50
Common paper	.30	@ .35

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Twines

(F. o. b. Mill)

Cotton—			
No. 1	.39	@	.40
No. 2	.37	@	.38
No. 3	.36	@	.37
B. C., 18 basis	.38	@	.40
A. B. Italian, 18 basis	.48	@	.53
Finished Jute—			
Dark 18 basis	.24	@	.25
Light 18 basis	.27	@	.28
Jute Wrapping, 3-6 Ply—			
No. 1	.21	@	.23
No. 2	.20	@	.22
Tube Rope—			
4-ply and larger	.18	@	.19
Fine Tube Yarn—			
5-ply and larger	.23	@	.27
4-ply	.24	@	.28
3-ply	.26	@	.30
Unfinished India—			
Basis	.16	@	.17
Paper Makers Twine Balls	.13	@	.15
Box Twine, 2-3 ply	.17	@	.19
Jute Rope	.21	@	.23
Ameri. Hemp, 6	.29	@	.31
Sisal Hay Rope—			
No. 1 Basis	.18	@	.20
No. 2 Basis	.16	@	.18
Sisal Lath Yarn—			
No. 1	.16	@	.18
No. 2	.14	@	.16
Manila Rope	.24	@	.26

CHICAGO

All Rag Bond	.35	@	.41
No. 1 Rag Bond	.25	@	.35
No. 2 Rag Bond	.14	@	.25
Water Marked Sulphite Bond	.09	@	.12
Sulphite Bond	.06¾	@	.11
Superfine writing	.18	@	.24
No. 1 fine writing	.14	@	.18
No. 2 fine writing	.12	@	.14
No. 3 fine writing	.08½	@	.12
No. 1 M. F. Book	.06½	@	.07¾
No. 2 M. F. Book	.05½	@	.06¾
No. 1 S.&S.C. Book	.06¾	@	.07½
No. 2 S.&S.C. Book	.05¾	@	.06½
Coated Book	.07½	@	.12
Coated Label	.07½	@	.10
News—Roll, mill	.03½	@	.04¼
News—Sheets, mill	.03¾	@	.04¾
No. 1 Manila	.04¼	@	.05¾
No. 1 Fibre	.04¾	@	.05¾
No. 2 Manila	.04¼	@	.04¾
Butcher's Manila	.04	@	.04½
No. 1 Kraft	.05¾	@	.06¼
Southern Kraft	.04½	@	.05
No. 2 Kraft	.05	@	.05¼
Wood Tag Boards	.04¼	@	.06¼
Sulphite Screenings	.03	@	.03¾
Manila Tissue—			
24x36 Sheet	.07	@	.07¾
White Tissue—			
20x30 Sheet	.07¼	@	.07½
Boards, per ton—			
(Delivered Central Territory)			
Plain Chip	45.00	@	—
Solid News	47.50	@	—
Manila Lined Chip	55.00	@	—
Container Lined—			
(Delivered Central Territory)			
85 Test	65.00	@	70.00
100 Test	70.00	@	—

Old Papers

(F. o. b. Chicago)

Shavings—			
No. 1 Hard White	2.80	@	2.90
White Env. Cuttings	3.60	@	3.70
No. 1 Soft Shavings	2.50	@	2.60
No. 1 Mixed	1.00	@	1.05
No. 2 Mixed	.90	@	1.00
Ledger & Writings	1.55	@	1.65
Solid Books	1.20	@	1.30
Blanks	1.70	@	1.80
Krafts	1.90	@	2.00
New Kraft Cuts	2.25	@	2.35
Manila Envelope Cuttings	2.00	@	2.10
Ex. No. 1 Manila	1.55	@	1.65
Print Manila	.90	@	1.00
Folded News (oversisue)	.65	@	.75
Old Newspapers—			
No. 1	.65	@	.75
No. 2	.60	@	.65
Mixed Papers—			
No. 1	.70	@	.80
Roofing Stocks—			
(F. o. b. Chicago, net cash)			
No. 1	30.00	@	—
No. 2	28.00	@	—

PHILADELPHIA

Paper

(F. o. b. Mill)

Bonds	.07	@	.40
Ledgers	.11	@	.40
Writings—			
Superfine	.13	@	.18
Extra fine	—	@	.22
Fine	.20	@	.26½
Fine, No. 2	.16	@	.25
Fine, No. 3	.12	@	.20
Book, M. F.	.06	@	.07
Book, S. S. & C.	.06	@	.07½
Book, Coated	.11	@	.16
Coated Lithograph	.09	@	.12
Label	.09	@	.12
News	.03¾	@	.04
No. 1 Jute Manila	.08½	@	.09
Manila Sul., No. 1	.04½	@	.06
Manila, No. 2	.04	@	.04½
No. 2 Kraft	.05¼	@	.05½
No. 1 Kraft	.06	@	.06¼
Common Bogus	.02¾	@	—
Straw Board	60.00	@	65.00
News Board	47.50	@	50.00
Chip Board	42.50	@	45.00
Wood Pulp Board	4.50	@	5.00
(Carload Lots)			
Binder Boards—			
No. 1, per ton	85.00	@	90.00
No. 2, per ton	70.00	@	75.00
Carload lots	60.00	@	65.00
Tarred Felts—			
Regular	58.00	@	63.00
Slaters (per roll)	.84	@	.94
Best Tarred, 1-ply (per roll)	1.85	@	1.95
Best Tarred, 2-ply (per roll)	1.44	@	1.54
Best Tarred, 3-ply	1.93	@	2.08
No. 1 Mixed Paper	.65	@	.70

Domestic Rags (New)

(Price to Mill, f. o. b. Phila.)

Shirt Cuttings—			
New White, No. 1	.11½	@	.12
New White, No. 2	.07	@	.07½
Light Silesias	.07	@	.07½
Silesias, No. 1	.07½	@	.08
Black Silesia, soft	.05	@	.05½
New Unbleached	.10½	@	.11
Washable	.04	@	.04½
Fancy	.05½	@	.06
Cottons—according to grades—			
Blue Overall	.07½	@	.08
New Blue	—	@	.04
New Black Soft	.05½	@	.06
New Light Seconds	.03	@	.03½
Khaki Cuttings	.04½	@	.05
Corduroy	.03	@	.03¾
New Canvas	.08	@	.09½
New Black Mixed	.05	@	.05½

Bagging

(F. o. b. Phila.)

Gunny, No. 1—			
Foreign	1.75	@	2.00
Domestic	1.75	@	2.00
Manila Rope	3.50	@	4.00
Sisal Rope	1.25	@	2.00
Mixed Rope	1.10	@	1.25
Scrap Burlaps	1.50	@	1.75
Wool Tares, heavy	3.00	@	3.50
Mixed Strings	1.25	@	1.35
No. 1, New Light Burlap	2.50	@	2.75
New Burlap Cuttings	—	@	2.50

Old Papers

(F. o. b. Phila.)

Shavings—			
No. 1 Hard White	3.50	@	3.60
No. 2 Hard White	3.00	@	3.25
No. 1 Soft White	2.50	@	2.75
No. 2 Soft White	1.90	@	2.00
No. 1 Mixed	1.50	@	1.60
No. 2 Mixed	.90	@	1.00
Solid Ledger Stock	1.90	@	2.00
Writing Paper	1.75	@	1.85
No. 1 Books, heavy	1.30	@	1.35
No. 2 Books, light	.85	@	.90
No. 1 New Manila	2.40	@	2.50
No. 1 Old Manila	1.50	@	1.60
Print Manila	1.00	@	1.10
Container Manila	.90	@	1.00
Old Kraft	2.00	@	2.20
Common Paper	.55	@	.60
No. 1 Mixed Paper	.60	@	.75
Straw Board, Chip	.65	@	.75
Binders Board, Chip	.65	@	.75
Overissue News	.80	@	.90
Old Newspaper	.60	@	.70

Domestic Rags (Old)

White, No. 1—			
Repacked	4.50	@	5.25
Miscellaneous	3.50	@	4.00
White, No. 2—			
Repacked	.02¼	@	.02¾
Miscellaneous	.02	@	.02¼
Thirds and Blues—			
Repacked	2.50	@	2.75
Miscellaneous	1.60	@	1.75
Black Stockings	3.50	@	3.75
Roofing Stock—			
No. 1	1.75	@	1.80

BOSTON

Paper

(F. o. b. Mill)

Ledgers—			
Sulphite	.07½	@	.15
Rag content	.15	@	.30
All rag	.38	@	.52½
Bonds—			
Sulphite	.06½	@	.11½
Rag content	.15	@	.30
All rag	.36½	@	.65
Writings	.07	@	.20
Superfines	.11	@	.31
News	.03½	@	.04
Book, Super	.06	@	.09
Book, M. F.	.05¾	@	.08½
Book, Coated	.08½	@	.20
Coated Litho	.09	@	.12
Label	.09½	@	.15
Jute Manila No. 1	.11	@	.13
Manila, Sul. No. 1	.04¾	@	.06½
Manila, Sul. No. 2	.03¾	@	.04½
No. 1 Kraft	.05½	@	.06½
No. 2 Kraft	.04¼	@	.05
Common Bogus	.02¼	@	.02¾
Delivered New England points			
Straw Board, rolls .009	57.50		
Straw Board in Sheets, basis 35s to 70s	54.50	@	55.00
Filled News Board			47.50
Chip Board			45.00
Single Manila Pulp lined board	55.00	@	60.00
Single White, patent coated board bender	72.50	@	82.50
Wood Pulp Board	80.00	@	85.00
Binder Boards	70.00	@	75.00
(F. o. b. Mill)			
Tarred Felts—			
Regular, carload lots	65.00	@	—

Old Papers

(F. o. b. Boston)

Shavings—			
No. 1 Hard White	2.75	@	3.10
No. 2 Hard White	2.60	@	2.90
No. 1 Soft White	2.60	@	—
No. 1 Mixed	1.10	@	1.15
No. 2 Mixed	.85	@	.90
Solid Ledger Stock	2.25	@	—
No. 1 Books, Heavy	1.50	@	1.60
No. 1 Books, Light	—	@	1.15
Manila Env. Cuttings	2.00	@	2.25
No. 1 Old Manila	1.25	@	1.35
White Blank News	1.50	@	—
Old Kraft	2.10	@	—
Print Manila	.70	@	.80
No. 1 Mixed Paper	.45	@	.50
Overissue News	.70	@	.80
Old Newspapers	.50	@	.60
Box Board, Chip	.65	@	—

Bagging

(Price f. o. b. Boston)

Gunny No. 1—			
Foreign	1.40	@	1.50
Domestic	1.50	@	1.60
Manila Rope and Strings—			
Foreign	—	@	2.75
Domestic	—	@	3.50
Mixed Strings	.90	@	1.00
Scrap Burlaps	1.37½	@	1.50
Wool Tares, heavy	—	@	1.50
New Burlap Cutting	2.25	@	2.37½

Domestic Rags (New)

(Price f. o. b. Boston)

Shirt Cuttings—			
New White No. 1	.11	@	.11½
Silesias, No. 1	.07	@	.07½
New Unbleached	.09½	@	.10
Fancy	.05	@	.05½
Washable	.04	@	.04½
Cottons—According to grades			
Blue Overalls	.07	@	.07½
New Black, soft	.04	@	.04¾
Khaki Cuttings	.04¾	@	.05¼
Corduroy	.03	@	.03½
New Canvas	.08	@	.08½

Domestic Rags (Old)

(Price f. o. b. Boston)

Canvas	.04½	@	—
White No. 1—			
Repacked	5.50	@	5.75
Miscellaneous	5.00	@	—
White No. 2—			
Repacked	.04½	@	.05
Miscellaneous	.03½	@	.04
Thirds and Blues—			
Repacked	2.00	@	2.12½
Miscellaneous	1.75	@	1.90
Roofing Stock—			
No. 1	1.70	@	—
No. 2	1.50	@	—
No. 3	1.10	@	—
No. 4	1.10	@	—

Foreign Rags

(F. o. b. Boston)

Dark Cottons	—	@	1.55
New No. 1 Shirt Cuttings	11.00	@	11.50
Dutch Blues	2.00	@	—
Lace Curtains	5.00	@	5.25
New Checks & Blues	4.50	@	4.65
Old Fustians	1.80	@	—

TORONTO

Paper

(F. o. b. Mill)

Bond—			
No. 1 Sulphite	.12½	@	—
No. 2 Sulphite	.10¾	@	—
No. 1 Colored	.13½	@	—
No. 2 Colored	.11¾	@	—
Ledgers (sulphite)	—	@	—
Ledgers, No. 1	.36	@	—
Ledgers, No. 2	.27	@	—
Writing	.09½	@	.10
News f. o. b. Mills—			
Rolls (carloads)	3.25	@	—
Sheets (carloads)	3.75	@	—
Sheets (2 tons or over)	4.00	@	—
Book—			
No. 1 M. F. (carloads)	7.75	@	—
No. 2 M. F. (carloads)	7.50	@	—
No. 3 M. F. (carloads)	7.25	@	—
No. 1 S. C. (carloads)	8.25	@	—
No. 2 S. C. (carloads)	8.00	@	—
No. 3 S. C. (carloads)	7.75	@	—
No. 1 Coated and Litho	14.50	@	—
No. 2 Coated and Litho	13.50	@	—
No. 3 Coated and Litho	12.75	@	—
Coated tinted	.15	@	—
Wrapping—			
Rag Brown	4.85	@	—
White Rag	5.25	@	—
"B" Manila	5.65	@	—
No. 1 Manila	6.65	@	—
Fiber	6.65	@	—
Kraft, M. F.	7.20	@	—
M. G.	7.35	@	—

Pulp

(F. o. b. Mill)

Ground Wood	27.00	@	28.00
Sulphite easy bleaching	60.00	@	—
Sulphite news grade	50.00	@	52.50
Sulphite, bleached	68.00	@	70.00
Sulphate	65.00	@	—

Old Waste Paper

(In carload lots, f. o. b. Toronto)

Shavings—			
White Env. Cut	3.00	@	—
Soft White Book Shavings	2.85	@	—
White Blk, News	1.50	@	—
Book and Ledger—			
Flat Magazine and Book Stock (old)	1.25	@	—
Light and Crumpled Book Stock	1.10	@	—
Ledgers and Writings	1.50	@	—
Solid Ledgers	1.50	@	—
Manilas—			
New Manila Cut	1.50	@	—
Printed Manilas	1.00	@	—
Kraft	2.25	@	—
News and Scrap—			
Strictly Overissue	.80	@	—
Strictly Folded	.80	@	—
No. 1 Mixed Paper	.65	@	—

Domestic Rags

(Price to mills, f. o. b. Toronto)

No. 1 White Shirt Cuttings	.12	@	.12½
Fancy Shirt Cuttings	.06	@	.06¼